Supplementary Appendix

Supplement to: The burden of adhesions in abdominal and pelvic surgery: a systematic review

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Appendix A. Full review Protocol (As registered through PROSPERO- CRD42012003180)

PROSPERO International prospective register of systematic reviews

Review title and timescale

1 Review title
Give the working title of the review. This must be in English. Ideally it should state succinctly the interventions or exposures being reviewed and the associated health or social problem being addressed in the review.
The burden of adhesions in abdominal and pelvic surgery: a systematic review

2 Original language title
For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.

3 Anticipated or actual start date
Give the date when the systematic review commenced, or is expected to commence.
05/10/2011

4 Anticipated completion date
Give the date by which the review is expected to be completed.
31/01/2013

5 Stage of review at time of this submission
Indicate the stage of progress of the review by ticking the relevant boxes. Reviews that have progressed beyond the point of completing data extraction at the time of initial registration are not eligible for inclusion in PROSPERO. This field should be updated when any amendments are made to a published record.

The review has not yet started
No

Review stage	Started	Completed
Preliminary searches	No	Yes
Piloting of the study selection process	No	Yes
Formal screening of search results against eligibility criteria	No	Yes
Data extraction	Yes	Yes
Risk of bias (quality) assessment	Yes	Yes
Data analysis	Yes	Yes

Provide any other relevant information about the stage of the review here.

Review team details

6 Named contact
The named contact acts as the guarantor for the accuracy of the information presented in the register record.
Richard ten Broek

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9 Named contact phone number
Enter the telephone number for the named contact, including international dialing code.
+31636304310

10 Organisational affiliation of the review
Full title of the organisational affiliations for this review, and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.
Dutch Adhesion Group
Website address:
www.adhesies.nl

11 Review team members and their organisational affiliations
Give the title, first name and last name of all members of the team working directly on the review. Give the organisational affiliations of each member of the review team.

Title	First name	Last name	Affiliation
Dr	Richard	ten Broek	Radboud University Nijmegen Medical Center
Mr	Yama	Issa	Radboud University Nijmegen Medical Center
Dr	Evert	van Santbrink	Erasmus Medical Center
Dr	Nicole	Bouvy	Maastricht University Medical Centre
Dr	Roy	Kruitwagen	Maastricht University Medical Centre
Professor	Johannes	Jeekel	Erasmus Medical Center
Dr	Erica	Bakkum	Onze Lieve Vrouwe Gasthuis Amsterdam
Dr	Harry	van Goor	Radboud University Nijmegen Medical Center
Professor	Marouska	Rovers	Radboud University Nijmegen Medical Center

12 Funding sources/sponsors

Give details of the individuals, organizations, groups or other legal entities who take responsibility for initiating, managing, sponsoring and/or financing the review. Any unique identification numbers assigned to the review by the individuals or bodies listed should be included.

No external funding

13 Conflicts of interest

List any conditions that could lead to actual or perceived undue influence on judgements concerning the main topic investigated in the review.

Are there any actual or potential conflicts of interest?

None known

14 Collaborators

Give the name, affiliation and role of any individuals or organisations who are working on the review but who are not listed as review team members.

Title	First name	Last name	Organisation details

Review methods

15 Review question(s)

State the question(s) to be addressed / review objectives. Please complete a separate box for each question.

To systematically review the incidence and morbidity of the four most important complications of postoperative adhesion formation, i.e:
small bowel obstruction
female infertility
difficulties during reoperation
chronic abdominal pain

16 Searches

Give details of the sources to be searched, and any restrictions (e.g. language or publication period). The full search strategy is not required, but may be supplied as a link or attachment.

We will search the Cochrane Central Register of Controlled Trials (CENTRAL), PubMed (1990 till present) and EMBASE (1990 till present). To increase the yield of relevant studies, we will also inspect the reference lists of all identified studies. There will be no language or publication restrictions. Over the last decades the introduction of new surgical techniques, protocols and standards has changed the indications and performance of surgery dramatically (e.g. the introduction of laparoscopy, percutaneous techniques, TME resection as the standard treatment in rectum carcinomas etc.). Although the cut-off point of 1990 is somewhat arbitrary, some date restriction is necessary to give representative numbers for contemporary surgery. We will perform a sensitivity analysis to study the influence of time by comparing the timeframe 1990-2000 and 2000- present (see below).

17 URL to search strategy

If you have one, give the link to your search strategy here. Alternatively you can e-mail this to PROSPERO and we will store and link to it.

18 Condition or domain being studied

Give a short description of the disease, condition or healthcare domain being studied. This could include health and wellbeing outcomes.

Small bowel obstruction, female inferitlity, inadvertent enterotomy, operative time, chronic abdominal pain.

19 Participants/population

Give summary criteria for the participants or populations being studied by the review. The preferred format includes details of both inclusion and exclusion criteria.

Patients with any peritoneal surgery in history.

20 Intervention(s), exposure(s)

Give full and clear descriptions of the nature of the interventions or the exposures to be reviewed
Any type of general, vascular, gynecological or urological surgery performed via laparotomy or laparoscopy.

21 Comparator(s)/control

Where relevant, give details of the alternatives against which the main subject/topic of the review will be compared (e.g. another intervention or a non-exposed control group).
Not applicable.

22 Types of study to be included initially

Give details of the study designs to be included in the review. If there are no restrictions on the types of study design eligible for inclusion, this should be stated.
Inclusion criteria: Different types of studies were considered if the incidence of adhesion related complications could be extracted for the cohort of patients with peritoneal surgery in history. Case series were considered if consecutive and a cohort of at least 10 patients was included. Exclusion criteria: Multiple publications of the same cohort with no new information on predefined outcomes. No transperitoneal surgery (i.e. preperitoneal or retroperitoneal surgery)

23 Context

Give summary details of the setting and other relevant characteristics which help define the inclusion or exclusion criteria.

24 Primary outcome(s)

Give the most important outcomes.
Incidence of adhesive small bowel obstruction.
Give information on timing and effect measures, as appropriate.
Up to 10 years after peritoneal surgery

25 Secondary outcomes

List any additional outcomes that will be addressed. If there are no secondary outcomes enter None.
Incidence of inadvertent enterotomy. Pregnancy rate following surgery. Incidence of chronic visceral pain. Incidence of any episode of small bowel obstruction. Incidence of adhesions found in patients with small bowel obstruction. Reoperations for adhesive small bowel obstruction. Length of hospital stay for episodes of adhesive small bowel obstruction. In-hospital mortality from adhesive small bowel obstruction. Difference in operative time between patients with or with no prior surgery in history. Utilization of fertility treatment for pregnancy. Incidence of adhesions in patients evaluated for postoperative acquired female inferteility Adhesions found during reoperation for chronic abdominal pain.

Give information on timing and effect measures, as appropriate.
Most outcomes up to 10 years after surgery. For outcomes "incidence of enterotomy " and "difference in operative time", timeframe is during a subsequent peritoneal operation. Fertility related outcomes are lifelong in the period after an abdominal operation.

26 Data extraction, (selection and coding)

Give the procedure for selecting studies for the review and extracting data, including the number of researchers involved and how discrepancies will be resolved. List the data to be extracted.
At least two reviewers will extract data on study design, characteristics, number of participants, and outcomes reported. An electronic data extraction sheet has been developed comprising quality scores and outcome data. Discrepancies will be resolved through discussion.

27 Risk of bias (quality) assessment

State whether and how risk of bias will be assessed, how the quality of individual studies will be assessed, and whether and how this will influence the planned synthesis.
Two reviewers will independently assess the methodological quality. The methodological quality of the included studies will be scored according to a revised version of the Newcastle-Ottowa Scale: Selection of cohort representativeness of cohort: rated one star if unselected surgical cohort or, within subgroups, a common operation type of operation using conventional techniques is performed. outcome was not present at start of study: rated one star if study demonstrated that outcome of interest was not already present at start of study. outcome assessment (blinding of outcome assessor, adequate time to follow-up for condition to -assessment method: rated one star if diagnosis was confirmed through a blinded outcome assessor or secure records (e.g. surgical records) Adequate time to follow up: rated one star, for longitudinal assessment of small bowel obstruction, fertility and chronic pain a follow-up of at least one year between operation and assessment. Longterm follow-up is not required for other outcomes. Follow-up methods Rated one star if percentage loss to follow-up is at maximum 10% and reasons for loss adequately described. Maximum score is 5 stars. 5 stars is considered high quality. 3 to 4 stars is considered intermediate quality and 1-2 stars low quality. Sensitivity analysis will be performed using this quality scoring.

28 Strategy for data synthesis

Give the planned general approach to be used, for example whether the data to be used will be aggregate or at the level of individual participants, and whether a quantitative or narrative (descriptive) synthesis is planned. Where appropriate a brief outline of analytic approach should be given.
Assessment of heterogeneity: Since large heterogeneity is to be expected we will first assess the clinical heterogeneity of the studies. Based on this clinical heterogeneity we defined some a priori subgroups based on the anatomical location, i.e. general surgery (unselected mixture of different operations), Upper GI, Lower GI, Hepato-biliairy and pancreatic surgery, abdominal wall surgery, gynecological surgery, urological and pediatric surgery. Furthermore, since minimal invasive techniques are often considered to be correlated with less adhesion related complication, we will also perform a subgroup analyses comparing laparoscopic vs. open surgery. However, from a societal perspective the overall incidence of adhesion related complications after any type of surgery might also be important, e.g. for policy makers. We will therefore also pool all studies. To adjust for some heterogeneity between studies we will use a random effects model. As recommended in the Cochrane handbook, heterogeneity was measured using I2 tests. An I2 value between 50 and 75% was defined as substantial heterogeneity and an I2= 75% was defined as considerable heterogeneity. Dealing with missing data: We will try to contact the authors to provide additional information in case of missing data. In primary analyses, we will only analyse the available data, but we will also explore the impact of incomplete data reporting on the validity of our results by performing scenario analyses (best and worst-case scenario). Best-case and worst-case scenarios will be made for the outcomes: •

Incidence of adhesive small bowel obstruction • Incidence of inadvertent enterotomy • Pregnancy rate following surgery • Incidence of chronic visceral pain • Incidence of any episode of small bowel obstruction • Reoperations for adhesive small bowel obstruction In the best-case scenario analyses we assume a lower incidence of adhesion related complications. i.e. all dropouts do not have an adhesion related outcome and all dropouts have become pregnant. In contrast, in the worst-case scenario analyses a higher incidence of adhesion related outcomes is assumed, i.e. all dropouts have the adhesion related outcome and none became pregnant. Data analyses: The inverse variance method will be used for pooling incidences and presented as proportion (p) with 95% confidence intervals (CI). Assessment of reporting biases: We will assess reporting biases using funnel plots.

29 Analysis of subgroups or subsets

Give any planned exploration of subgroups or subsets within the review. 'None planned' is a valid response if no subgroup analyses are planned.

We plan to perform the following subgroup analyses: • Subgroups according to anatomical location: general surgery (unselected mixture of different operations), upper gastro-intestinal tract lower gastro-intestinal tract hepato-biliairy and pancreatic surgery abdominal wall surgery gynecological surgery urological surgery pediatric surgery • Minimal invasive vs. open technique laparotomy laparoscopy We will perform sensitivity analyses to study the robustness of the results in four stages: 1) We will test whether the impact of a single study was strong enough to significantly affect the pooled estimate. This sensitivity assessment was performed excluding each individual study in turn, repeating the analysis systematically and then comparing the resulting pooled estimate and 95% confidence interval, with the estimate and interval obtained including all the studies. A change in the pooled estimate of more than 10% or in the confidence interval of more than 25% was considered significant and reported. 2) We will compare the effects according to the methodological quality of the study, i.e. high, intermediate or low quality. 3) We will compare the pooled outcome of prospective cohorts with those of the retrospective cohorts. 4) We will compare studies between 1990- 2000 with those published as from 2000 until present.

Review general information

30 Type of review

Select the type of review from the drop down list.

Other

31 Language

Select the language(s) in which the review is being written and will be made available, from the drop down list. Use the control key to select more than one language.

English

Will a summary/abstract be made available in English?

Yes

32 Country

Select the country in which the review is being carried out from the drop down list. For multi-national collaborations select all the countries involved. Use the control key to select more than one country.

Netherlands

33 Other registration details

List places where the systematic review title or protocol is registered (such as with he Campbell Collaboration, or The Joanna Briggs Institute). The name of the organisation and any unique identification number assigned to the review by that organization should be included.

34 Reference and/or URL for published protocol

Give the citation for the published protocol, if there is one.

Give the link to the published protocol, if there is one. This may be to an external site or to a protocol deposited with CRD in pdf format.

35 Dissemination plans

Give brief details of plans for communicating essential messages from the review to the appropriate audiences.

Do you intend to publish the review on completion?

Yes

36 Keywords

Give words or phrases that best describe the review. (One word per box, create a new box for each term)

Adhesions
Incidence
burden of disease
small bowel obstruction
complications
surgery
laparotomy
laparotoscopy
enterotomy

37 Details of any existing review of the same topic by the same authors

Give details of earlier versions of the systematic review if an update of an existing review is being registered, including full bibliographic reference if possible.

38 Current review status

Review status should be updated when the review is completed and when it is published.

Completed but not published

30/04/2013

Appendix B. Full reference to included studies and unretrieved studies

References to included studies:

(1) Abasbassi M, Pottel H, Deylgat B, Vansteenkiste F, Van RF, Devriendt D et al. Small Bowel Obstruction After Antecolic Antegastric Laparoscopic Roux-en-Y Gastric Bypass Without Division of Small Bowel Mesentery: A Single-Centre, 7-Year Review. Obes Surg 2011.

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(13) Atiq OT, Kelsen DP, Shiu MH, Saltz L, Tong W, Niedzwiecki D et al. Phase II trial of postoperative adjuvant intraperitoneal cisplatin and fluorouracil and systemic fluorouracil chemotherapy in patients with resected gastric cancer. J Clin Oncol 1993; 11(3):425-433.

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(15) Baghai M, Ramshaw BJ, Smith CD, Fearing N, Bachman S, Ramaswamy A. Technique of laparoscopic ventral hernia repair can be modified to successfully repair large defects in patients with loss of domain. Surg Innov 2009; 16(1):38-45.

(16) Bartels S, Vlug M, Hollmann M, Ubbink D, Cense H, Van WB et al. Incisional hernia and adhesion-related complications; Long term follow-up of a randomized trial comparing laparoscopic with open colonic resection within a fast track program [the LAparoscopy and/or FAst track multimodal management versus standard care study (LAFL)]. Colorectal Disease 2012; Conference(var.pagings):October.

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Appendix C. General study Characteristics and results from risk of bias assessment

Study	Design	Population	Operation	Technique	SBO	Difficulties at reoperation	Infertility	Pain	**Selection of cohort**	**Outcome assessment**
Abasbassi 2011	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0		**
Aberg 2007	retrospective	Adult	Colorectal	Laparotomy	1	0	0	0	**	***
Abol-Enein 2001	retrospective	Adult	Urology	Laparotomy	1	0	0	0	*	**
Adachi 1995	retrospective	Adult	Upper GI	Laparotomy	1	0	0	0		***
Ahlberg 1997	retrospective	Paediatric	Appendectomy	Laparotomy	1	0	0	0	*	**
Akgur 1991	retrospective	Paediatric	General Surgery	NA	1	1	0	0	**	***
Alexakis 2003	prospective	Adult	Hepato-biliary pancreatic	Laparotomy	1	0	0	0	*	***
Alwan 1999	retrospective	Adult	Colorectal	NA	1	1	0	0	*	***
Ambiru 2008	retrospective	Adult	General Surgery	Mixed, no subgroups	1	0	0	0	*	***
Aminsharifi 2011	retrospective	Adult	Urology	Laparoscopy	0	1	0	0	*	***
Amos 1996	retrospective	Adult	Colorectal	NA	1	0	0	0	*	***
Arnold 2010	retrospective	Paediatric	Colorectal	Laparotomy	1	0	0	0	*	***
Atiq 1993	prospective	Adult	Upper GI	Laparotomy	1	0	0	0		***
Baccari 2009	retrospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0	**	***
Baghai 2009	prospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0	*	***
Bartels 2012	retrospective	Adult	Colorectal	Mixed, subgroups	1	0	0	0	*	***
Beck 1999	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***
Becmeur 1998	retrospective	Paediatric	General Surgery	Laparoscopy	1	1	0	0	*	***
Ben-Haim 2002	retrospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0	**	***
Beyrout 2006	retrospective	Adult	General Surgery	NA	1	0	0	0	*	***
Bissada 2004	retrospective	Adult	Urology	Laparotomy	1	0	0	0	*	**
Blachar 2001	retrospective	Adult	Hepato-biliary pancreatic	Laparotomy	1	0	0	0		***
Blachar 2002	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0	*	*
Bojahr 1995	retrospective	Adult	General Surgery	Mixed, no subgroups	0	0	0	1	**	***
Boone 2012	retrospective	Adult	Colorectal	NA	0	1	0	0	*	***
Borzellino 2004	retrospective	Adult	General Surgery	Laparoscopy	1	1	0	0		***
Bouasker 2010	retrospective	Adult	Laparoscopic Cholecystectomy	Laparoscopy	0	1	0	0	**	***
Boukerrou 2001	retrospective	Adult	Gynaecology	Laparoscopy	0	1	0	0	**	***
Bringman 2005	retrospective	Adult	Laparscopic Inguinal Hernia repair	Laparoscopy	0	0	0	0	*	***
Burcos 2002	retrospective	Adult	General Surgery	Laparotomy	0	1	0	0	**	***
Cabot 2010	prospective	Adult	Colorectal	Laparoscopy	1	0	0	0	*	***
Capella 2006	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0	*	***
Catena 2012	prospective	Adult	General Surgery	Laparotomy	1	0	0	0	**	***
Champion 2003	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0	*	**
Chang 2012	retrospective	Paediatric	Colorectal	Mixed, subgroups	1	0	0	0	*	***
Chen 1999	retrospective	Adult	General Surgery	NA	1	0	0	0	*	***
Chin 2007	prospective	Adult	Urology	Laparoscopy	1	0	0	0		**
Cho 2006	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0	*	*

Chopra 2003	retrospective	Adult	General Surgery	Mixed, subgroups	1	1	0	0	**	***
Chou 2005	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***
Choudhry 2006	retrospective	Paediatric	General Surgery	Laparotomy	1	0	0	0	**	***
Coleman 2000	prospective	Adult	General Surgery	Laparotomy	0	1	0	0	**	***
Coran 1990	retrospective	Adult and Paediatric	Colorectal	Laparotomy	1	0	0	0	*	***
Counihan 1994	retrospective	Adult	Colorectal	Laparotomy	0	0	1	0	*	*
Cox 1993	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***
Cox 1993a	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***
Dadan 1996	retrospective	Adult	Rectum prolaps	Laparotomy	1	0	0	0		***
Dasmahapatra 1991	retrospective	Adult	Colorectal	Laparotomy	1	0	0	0		***
Duron 2000	retrospective	Adult	General Surgery	Mixed, no subgroups	1	0	0	0	*	***
Duron 2008	prospective	Adult	General Surgery	Laparoscopy	1	0	0	0	*	***
Edna 1998	retrospective	Adult	Colorectal	Laparotomy	1	0	0	0	*	***
El-Gohary 2010	retrospective	Paediatric	Colorectal	Laparotomy	1	0	0	0		***
Els 1993	retrospective	Adult	Colorectal	Laparotomy	1	0	0	0		***
Ercan 2009	prospective	Adult	Laparoscopic Cholecystectomy	Laparoscopy	0	1	0	0	**	***
Escobar 2004	retrospective	Paediatric	Upper GI	Laparotomy	1	0	0	0		***
Eshuis 2010	prospective	Adult	Colorectal	Mixed, subgroups	1	0	0	0	*	***
Fan 2001	retrospective	Adult	Colorectal	Laparotomy	1	0	0	0		***
Fazio 2006	prospective	Adult	Colorectal	Laparotomy	1	0	0	0	**	***
Ferrari 2008	retrospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0	*	***
Fevang 2004	retrospective	Adult	General Surgery	NA	0	1	0	1	**	***
Finan 1997	retrospective	Adult	Gynaecology	Laparotomy	0	1	0	0	*	***
Finnell 2007	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	0	0	0	0	**	**
Francois 1994	retrospective	Adult	General Surgery	Laparoscopy	0	1	0	0	**	***
Freys 1994	prospective	Adult	General Surgery	Laparoscopy	0	1	0	0	**	***
Fuchs 1992	retrospective	Adult	Laparoscopic Cholecystectomy	Laparoscopy	0	1	0	0	**	***
Gorgun 2004	retrospective	Adult	Colorectal	NA	0	0	1	0		*
Grant 2008	retrospective	Paediatric	General Surgery	Laparotomy	1	0	0	0	**	***
Gunabushanam 2009	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0	*	*
Guru 2010	retrospective	Adult	Other Lower GI	Laparoscopy	1	0	0	0		**
Ha 2008	retrospective	Paediatric	Other Lower GI	Laparotomy	1	0	0	0	*	***
Hahnloser 2004	prospective	Adult	Colorectal	Laparotomy	0	0	1	0		*
Hamel 2000	prospective	Adult	Colorectal	Laparoscopy	0	1	0	0	**	***
Hashimoto 2012	prospective	Adult	General Surgery	Laparotomy	1	0	0	0	**	*
Hayashi 2008	prospective	Adult	Upper GI	Laparotomy	1	0	0	0	**	***
Hernandez-Richter 1999	retrospective	Adult	Laparscopic Inguinal Hernia repair	Laparoscopy	1	0	0	0		*
Howard 2000	prospective	Adult	Gynaecology	Mixed, no subgroups	0	0	0	1	*	***
Hudson 1997	retrospective	Adult	Colorectal	Laparotomy	0	0	1	0	*	*
Husain 2001	retrospective	Adult	Gynaecology	Laparoscopy	0	1	0	0	*	***

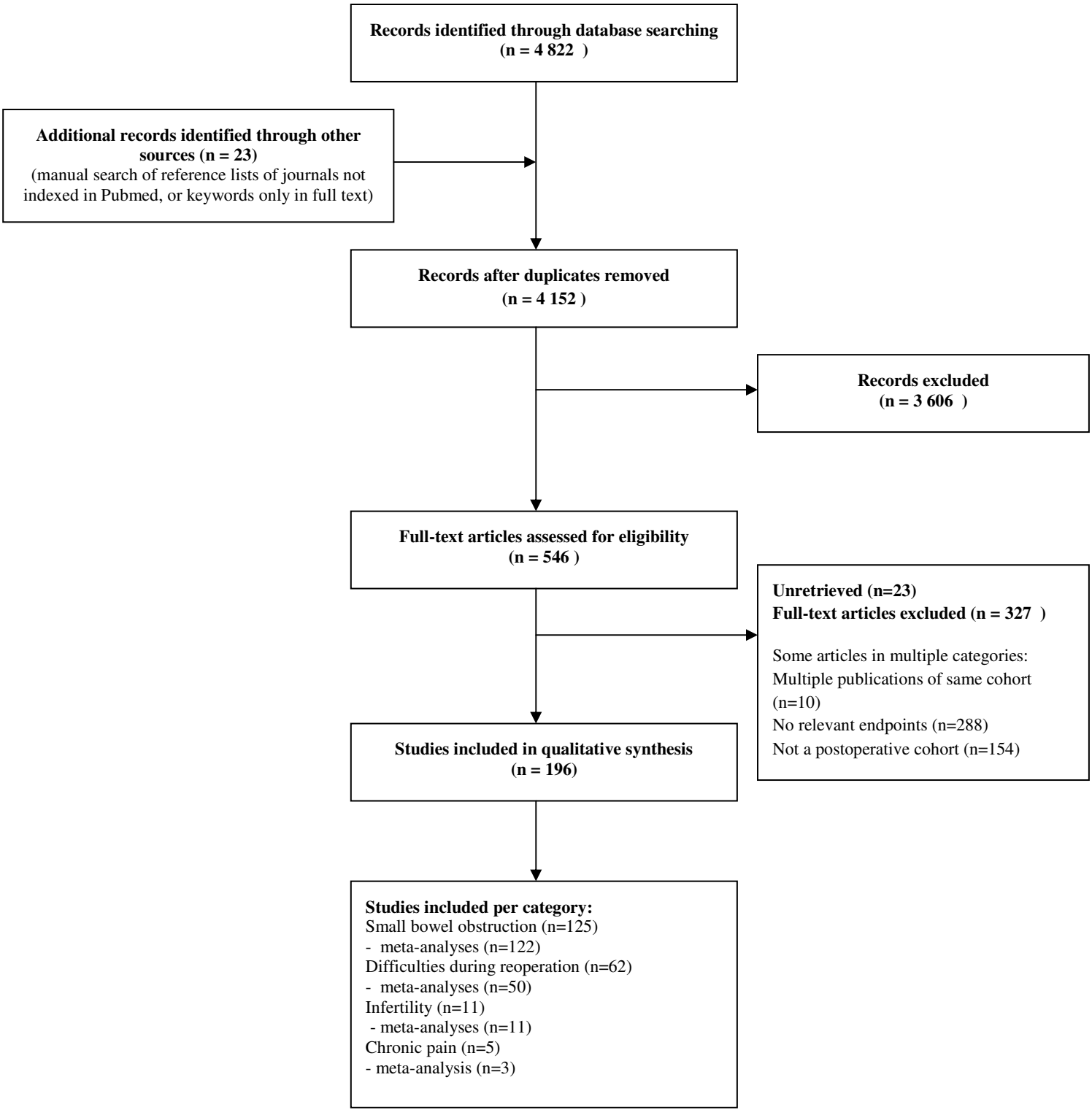
Husain 2007	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0	*	***
Hwang 2004	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0	*	**
Inoue 2005	prospective	Paediatric	General Surgery	Laparotomy	0	1	0	0	**	***
Jeong 2008	retrospective	Adult	Colorectal	Mixed, no subgroups	1	0	0	0	*	***
Johanet 1999	retrospective	Adult	General Surgery	Laparotomy	1	1	0	0	*	***
Johnson 2004	retrospective	Adult	Colorectal	Laparotomy	0	0	1	0	*	*
Karayiannakis 2004	retrospective	Adult	Laparoscopic Cholecystectomy	Laparoscopy	0	1	0	0	**	***
Kawamura 2009	retrospective	Adult	Other Lower GI	Laparotomy	1	0	0	0	**	***
Kawamura 2010	retrospective	Adult	Upper GI	Laparotomy	0	1	0	0		***
Keck 1994	retrospective	Adult	Colorectal	Laparotomy	0	1	0	0	**	***
Kehoe 2009	retrospective	Adult	Gynaecology	Laparotomy	1	0	0	0		***
Khaikin 2007	retrospective	Adult	General Surgery	Mixed, no subgroups	1	0	0	0	*	***
Khaitan 2003	retrospective	Adult	General Surgery	Laparoscopy	1	0	0	0		***
Kirshtein 2002	retrospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0		***
Klausner 1995	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0		***
Kolmorgen 1998	retrospective	Adult	Gynaecology	Laparoscopy	0	1	0	0	**	***
Komori 1997	retrospective	Adult	Aorta Surgery	Laparotomy	0	1	0	0	*	***
Kumakiri 2010	prospective	Adult	Colorectal	Laparotomy	0	1	0	0	*	***
Kurian 2010	retrospective	Adult	General Surgery	NA	1	0	0	0	**	**
Kusunoki 2005	retrospective	Adult	Gynaecology	Laparoscopy	0	1	0	0	**	***
Kwok 2004	retrospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0	**	***
Kyzer 1999	prospective	Adult	Colorectal	Laparotomy	0	1	0	0	**	***
Kössi 2004	retrospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0	**	***
Kössi 2009	prospective	Adult	Colorectal	Laparoscopy	0	1	0	0	**	***
LeBlanc 2003	retrospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0	**	***
Lee 2012	prospective	Adult	Colorectal	NA	1	0	0	0	*	**
Lehmann-Willenbrock 1990	retrospective	Adult	Appendectomy	NA	0	0	1	1	*	***
Lepisto 2007	retrospective	Adult	Colorectal	Laparotomy	0	0	1	0		*
Leung 2009	retrospective	Adult	Appendectomy	Mixed, no subgroups	1	0	0	0	*	***
Lin 1995	retrospective	Paediatric	Other Lower GI	Laparotomy	1	0	0	0		***
Lo 2007	retrospective	Adult	General Surgery	NA	1	0	0	0	*	***
Lumley 2002	prospective	Adult	Colorectal	Laparoscopy	1	0	0	0	*	***
MacLean 2002	retrospective	Adult	Colorectal	NA	1	0	0	0		***
Mais 1998	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***
Majewski 2005	prospective	Adult	General Surgery	Mixed, subgroups	1	0	0	0	*	*
Matter 1997	retrospective	Adult	General Surgery	NA	1	0	0	0	*	***
Mendez-Gallart 2011	retrospective	Paediatric	Other Lower GI	Mixed, no subgroups	1	0	0	0		***
Menzies 1990	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	**
Menzies 2001	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***
Miller 2000	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***

Miller 2002	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***
Miyashiro 2010	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0		***
Montz 1994	retrospective	Adult	Gynaecology	Laparotomy	1	0	0	0		***
Morales 2007	retrospective	Adult	Caesarean section	Laparotomy	0	1	0	0	**	***
Mortier 2006	retrospective	Adult	Colorectal	Laparotomy	0	0	1	0	**	**
Muffly 2012	retrospective	Adult	Gynaecology	Mixed, subgroups	1	0	0	0	**	***
Murphy 2006	retrospective	Paediatric	Colorectal	Laparotomy	1	0	0	0		***
Naguib 2012	prospective	Adult	Colorectal	Laparoscopy	0	1	0	0	**	***
Nazemi 2006	retrospective	Adult	Urology	Laparoscopy	0	1	0	0		***
Nelson 2006	prospective	Adult	Roux-en-Y Gastric Bypass	Mixed, subgroups	1	0	0	0	*	***
Ng 2009	prospective	Adult	Colorectal	Mixed, subgroups	1	0	0	0	*	***
Nieuwenhuijzen 1998	retrospective	Adult	Colorectal	Laparotomy	1	0	0	0	*	***
Nour 1996	retrospective	Paediatric	Colorectal	Laparotomy	1	0	0	0		***
Nozaki 2008	retrospective	Adult	Colorectal	Laparoscopy	0	1	0	0	**	***
Oliveira 1997	retrospective	Adult	Other Lower GI	Laparoscopy	0	1	0	0	**	***
Olsen 2002	retrospective	Adult	Other Lower GI	Laparotomy	1	0	0	0		**
Olver 1990	retrospective	Adult	Colorectal	Laparotomy	0	0	1	0	*	*
Oresland 1994	retrospective	Adult	Colorectal	Laparotomy	0	0	1	0	*	
Pace 2002	prospective	Adult	Colorectal	Laparoscopy	1	0	0	0		***
Parakh 2007	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0		*
Parent 1995	retrospective	Adult	General Surgery	Laparoscopy	1	1	0	0	*	***
Parikh 2008	retrospective	Adult	Colorectal	NA	1	0	0	0	**	***
Parsons 2002	retrospective	Adult	Urology	Laparoscopy	0	1	0	0	*	***
Perrone 2005	retrospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0	**	***
Petersen 2009	prospective	Adult	Colorectal	Laparoscopy	0	1	0	0	*	***
Petros 2011	prospective	Adult	Urology	Laparoscopy	0	1	0	0	*	***
Pitt 2008	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	0	0	0	1	*	***
Pohl 2008	retrospective	Adult	Urology	Laparoscopy	0	1	0	0		***
Ragni 1996	retrospective	Adult	Colorectal	Laparotomy	1	0	0	0		*
Rempen 1995	retrospective	Adult	Gynaecology	Mixed, no subgroups	1	0	0	0		*
Ritchey 1993	retrospective	Paediatric	Urology	Laparotomy	1	0	0	0		***
Rogula 2007	retrospective	Adult	Laparoscopic Roux-en-Y Gastric Bypass	Laparoscopy	1	0	0	0	*	***
Rosen 2009	retrospective	Adult	Abdominal Wall	Mixed, no subgroups	1	0	0	0		***
Rosin 2000	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***
Rosin 2007	prospective	Adult	Colorectal	Laparoscopy	1	0	0	0	*	***
Ryan 2004	retrospective	Adult	Colorectal	NA	1	0	0	0	*	*
Sai 2007	retrospective	Paediatric	Other Lower GI	Laparoscopy	1	0	0	0		*
Saklani 2012	retrospective	Adult	Colorectal	Mixed, subgroups	1	0	0	0	**	***
Salum 2001	retrospective	Adult	Colorectal	Laparotomy	1	0	0	0	*	***
Sato 2001	retrospective	Adult	General Surgery	Laparoscopy	0	1	0	0		***

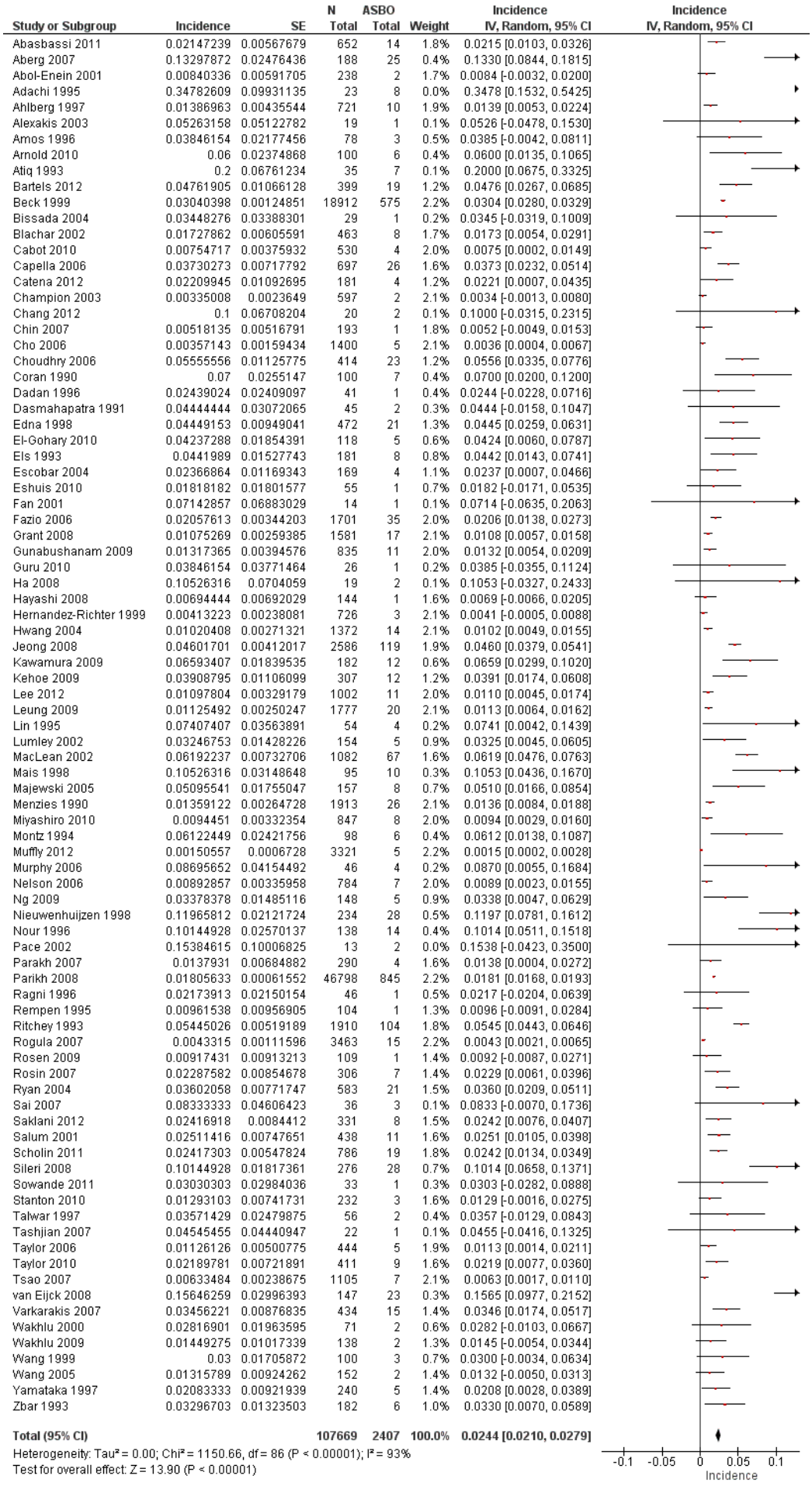
Scholin 2011	retrospective	Adult	Colorectal	Mixed, subgroups	1	0	0	0	*	**
Seki 2007	retrospective	Adult	Colorectal	Laparoscopy	0	1	0	0		***
Seror 1993	retrospective	Adult	General Surgery	NA	1	0	0	0	*	***
Shayani 2002	retrospective	Adult	Other Lower GI	Laparoscopy	0	1	0	0	*	***
Shieh 1995	retrospective	Paediatric	General Surgery	Laparotomy	1	0	0	0	*	***
Shih 2003	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	***
Shikata 1990	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0	*	**
Siddiqui 2010	prospective	Adult	Urology	Laparoscopy	0	1	0	0	*	***
Sileri 2008	prospective	Adult	Colorectal	Laparotomy	1	0	0	0	*	***
Sosa 1993	retrospective	Adult	General Surgery	NA	1	0	0	0	*	***
Sowande 2011	retrospective	Paediatric	Colorectal	Laparotomy	1	0	0	0		**
Stanton 2010	retrospective	Paediatric	Upper GI	Mixed, subgroups	1	0	0	0		***
Suzuki 2003	retrospective	Adult	General Surgery	Laparotomy	1	0	0	0		***
Talwar 1997	prospective	Adult	Other Lower GI	Laparotomy	1	0	0	0		*
Tang 2003	prospective	Adult	Other Lower GI	Laparotomy	0	1	0	0	*	***
Tashjian 2007	retrospective	Paediatric	Other Lower GI	Laparotomy	1	0	0	0		***
Taylor 2006	retrospective	Adult	Upper GI	Laparotomy	1	0	0	0		***
Taylor 2010	retrospective	Adult	Colorectal	Mixed, subgroups	1	0	0	0	*	**
Ten Broek 2012	prospective	Adult	General Surgery	Mixed, subgroups	0	1	0	0	**	***
Tjandra 2008	prospective	Adult	Other Lower GI	Laparotomy	0	1	0	0	**	***
Tsao 2007	retrospective	Paediatric	Appendectomy	Mixed, subgroups	1	0	0	0	*	***
Unger 2000	retrospective	Adult	Laparoscopic Cholecystectomy	NA	0	1	0	0	*	***
Van Der Krabben 2000	retrospective	Adult	Other Lower GI	Laparotomy	0	1	0	0	**	***
van Eijck 2008	retrospective	Paediatric	Abdominal Wall	Laparotomy	1	0	0	0	*	***
Varkarakis 2007	retrospective	Adult	Urology	NA	1	0	0	0		***
Varnell 2008	retrospective	Adult	Abdominal Wall	Laparoscopy	0	1	0	0		***
Veselyi 1997	retrospective	Paediatric	Appendectomy	NA	1	0	0	0		***
Vignali 2007	retrospective	Adult	Colorectal	Laparoscopy	0	1	0	0	**	***
Wakhlu 2000	retrospective	Paediatric	Abdominal Wall	Laparotomy	1	0	0	0		**
Wakhlu 2009	retrospective	Paediatric	Colorectal	Laparotomy	1	0	0	0		***
Wang 1999	retrospective	Paediatric	Urology	Laparotomy	1	0	0	0		***
Wang 2005	retrospective	Adult	Colorectal	Laparotomy	1	0	0	0		**
Wang 2009	retrospective	Adult	Other Lower GI	Laparoscopy	1	0	0	0		***
Wikland 1990	retrospective	Adult	Colorectal	Laparotomy	0	0	1	0	*	**
Yamataka 1997	retrospective	Adult and Paediatric	Hepato-biliary pancreatic	NA	1	0	0	0		**
Yu 1994	retrospective	Adult	Laparoscopic Cholecystectomy	Laparoscopy	0	1	0	0	*	***
Yuh 2009	retrospective	Adult	Urology	Laparoscopy	0	1	0	0	*	***
Zbar 1993	retrospective	Adult	Appendectomy and Cholecystectomy	Laparotomy	1	0	0	0	**	**

Appendix D. Full results of systematic review and meta-analysis

P.1 Prisma flow chart



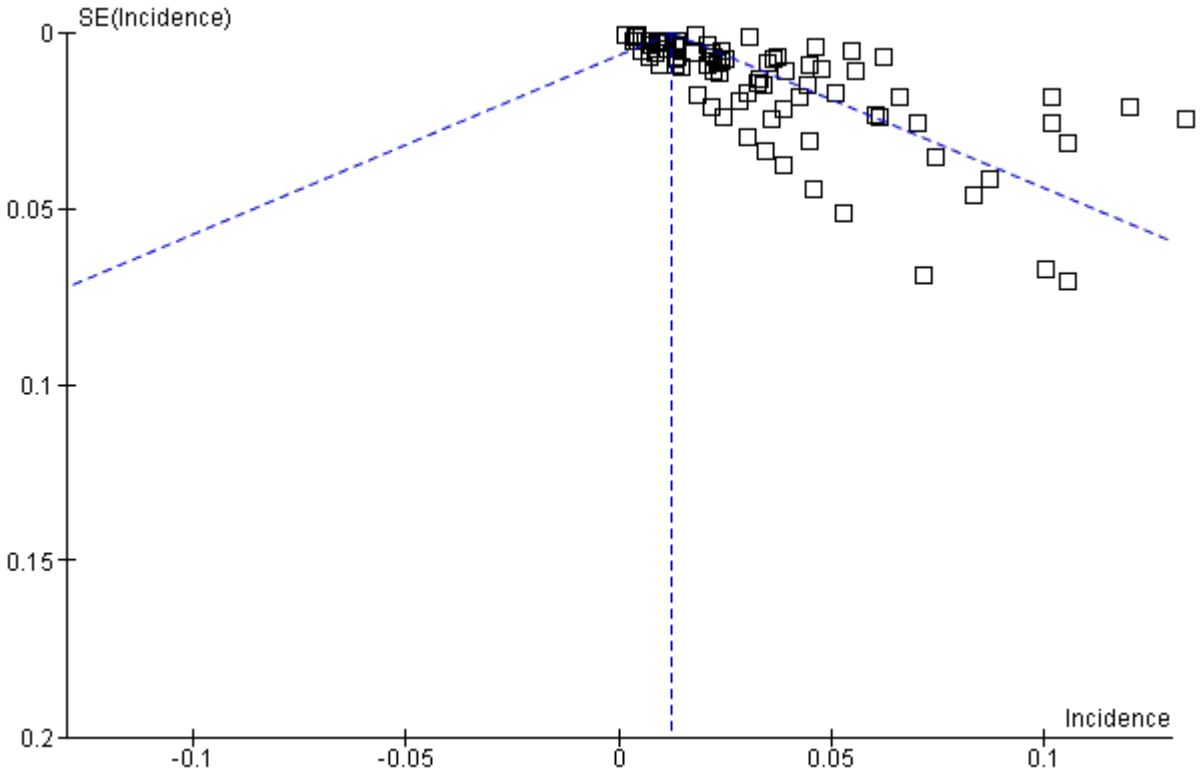
1.1.1. Forest plot of the incidence of ASBO, including all studies



Study or Subgroup	Incidence	SE	N Total	ASBO Total	Weight	Incidence IV, Random, 95% CI
Abasbassi 2011	0.02147239	0.00567679	652	14	1.8%	0.0215 [0.0103, 0.0326]
Aberg 2007	0.13297872	0.02476436	188	25	0.4%	0.1330 [0.0844, 0.1815]
Abol-Enein 2001	0.00840336	0.00591705	238	2	1.7%	0.0084 [-0.0032, 0.0200]
Adachi 1995	0.34782609	0.09931135	23	8	0.0%	0.3478 [0.1532, 0.5425]
Ahlberg 1997	0.01386963	0.00435544	721	10	1.9%	0.0139 [0.0053, 0.0224]
Alexakis 2003	0.05263158	0.05122782	19	1	0.1%	0.0526 [-0.0478, 0.1530]
Amos 1996	0.03846154	0.02177456	78	3	0.5%	0.0385 [-0.0042, 0.0811]
Arnold 2010	0.06	0.02374868	100	6	0.4%	0.0600 [0.0135, 0.1065]
Atiq 1993	0.2	0.06761234	35	7	0.1%	0.2000 [0.0675, 0.3325]
Bartels 2012	0.04761905	0.01066128	399	19	1.2%	0.0476 [0.0267, 0.0685]
Beck 1999	0.03040398	0.00124851	18912	575	2.2%	0.0304 [0.0280, 0.0329]
Bissada 2004	0.03448276	0.03388301	29	1	0.2%	0.0345 [-0.0319, 0.1009]
Blachar 2002	0.01727862	0.00605591	463	8	1.7%	0.0173 [0.0054, 0.0291]
Cabot 2010	0.00754717	0.00375932	530	4	2.0%	0.0075 [0.0002, 0.0149]
Capella 2006	0.03730273	0.00717792	697	26	1.6%	0.0373 [0.0232, 0.0514]
Catena 2012	0.02209945	0.01092695	181	4	1.2%	0.0221 [0.0007, 0.0435]
Champion 2003	0.00335008	0.0023649	597	2	2.1%	0.0034 [-0.0013, 0.0080]
Chang 2012	0.1	0.06708204	20	2	0.1%	0.1000 [-0.0315, 0.2315]
Chin 2007	0.00518135	0.00516791	193	1	1.8%	0.0052 [-0.0049, 0.0153]
Cho 2006	0.00357143	0.00159434	1400	5	2.1%	0.0036 [0.0004, 0.0067]
Choudhry 2006	0.05555556	0.01125775	414	23	1.2%	0.0556 [0.0335, 0.0776]
Coran 1990	0.07	0.0255147	100	7	0.4%	0.0700 [0.0200, 0.1200]
Dadan 1996	0.02439024	0.02409097	41	1	0.4%	0.0244 [-0.0228, 0.0716]
Dasmahapatra 1991	0.04444444	0.03072065	45	2	0.3%	0.0444 [-0.0158, 0.1047]
Edna 1998	0.04449153	0.00949041	472	21	1.3%	0.0445 [0.0259, 0.0631]
El-Gohary 2010	0.04237288	0.01854391	118	5	0.6%	0.0424 [0.0060, 0.0787]
Els 1993	0.0441989	0.01527743	181	8	0.8%	0.0442 [0.0143, 0.0741]
Escobar 2004	0.02366864	0.01169343	169	4	1.1%	0.0237 [0.0007, 0.0466]
Eshuis 2010	0.01818182	0.01801577	55	1	0.7%	0.0182 [-0.0171, 0.0535]
Fan 2001	0.07142857	0.06883029	14	1	0.1%	0.0714 [-0.0635, 0.2063]
Fazio 2006	0.02057613	0.00344203	1701	35	2.0%	0.0206 [0.0138, 0.0273]
Grant 2008	0.01075269	0.00259385	1581	17	2.1%	0.0108 [0.0057, 0.0158]
Gunabushanam 2009	0.01317365	0.00394576	835	11	2.0%	0.0132 [0.0054, 0.0209]
Guru 2010	0.03846154	0.03771464	26	1	0.2%	0.0385 [-0.0355, 0.1124]
Ha 2008	0.10526316	0.0704059	19	2	0.1%	0.1053 [-0.0327, 0.2433]
Hayashi 2008	0.00694444	0.00692029	144	1	1.6%	0.0069 [-0.0066, 0.0205]
Hernandez-Richter 1999	0.00413223	0.00238081	726	3	2.1%	0.0041 [-0.0005, 0.0088]
Hwang 2004	0.01020408	0.00271321	1372	14	2.1%	0.0102 [0.0049, 0.0155]
Jeong 2008	0.04601701	0.00412017	2586	119	1.9%	0.0460 [0.0379, 0.0541]
Kawamura 2009	0.06593407	0.01839535	182	12	0.6%	0.0659 [0.0299, 0.1020]
Kehoe 2009	0.03908795	0.01106099	307	12	1.2%	0.0391 [0.0174, 0.0608]
Lee 2012	0.01097804	0.00329179	1002	11	2.0%	0.0110 [0.0045, 0.0174]
Leung 2009	0.01125492	0.00250247	1777	20	2.1%	0.0113 [0.0064, 0.0162]
Lin 1995	0.07407407	0.03563891	54	4	0.2%	0.0741 [0.0042, 0.1439]
Lumley 2002	0.03246753	0.01428226	154	5	0.9%	0.0325 [0.0045, 0.0605]
MacLean 2002	0.06192237	0.00732706	1082	67	1.6%	0.0619 [0.0476, 0.0763]
Mais 1998	0.10526316	0.03148648	95	10	0.3%	0.1053 [0.0436, 0.1670]
Majewski 2005	0.05095541	0.01755047	157	8	0.7%	0.0510 [0.0166, 0.0854]
Menzies 1990	0.01359122	0.00264728	1913	26	2.1%	0.0136 [0.0084, 0.0188]
Miyashiro 2010	0.0094451	0.00332354	847	8	2.0%	0.0094 [0.0029, 0.0160]
Montz 1994	0.06122449	0.02421756	98	6	0.4%	0.0612 [0.0138, 0.1087]
Muffly 2012	0.00150557	0.0006728	3321	5	2.2%	0.0015 [0.0002, 0.0028]
Murphy 2006	0.08695652	0.04154492	46	4	0.2%	0.0870 [0.0055, 0.1684]
Nelson 2006	0.00892857	0.00335958	784	7	2.0%	0.0089 [0.0023, 0.0155]
Ng 2009	0.03378378	0.01485116	148	5	0.9%	0.0338 [0.0047, 0.0629]
Nieuwenhuijzen 1998	0.11965812	0.02121724	234	28	0.5%	0.1197 [0.0781, 0.1612]
Nour 1996	0.10144928	0.02570137	138	14	0.4%	0.1014 [0.0511, 0.1518]
Pace 2002	0.15384615	0.10006825	13	2	0.0%	0.1538 [-0.0423, 0.3500]
Parakh 2007	0.0137931	0.00684882	290	4	1.6%	0.0138 [0.0004, 0.0272]
Parikh 2008	0.01805633	0.00061552	46798	845	2.2%	0.0181 [0.0168, 0.0193]
Ragni 1996	0.02173913	0.02150154	46	1	0.5%	0.0217 [-0.0204, 0.0639]
Rempen 1995	0.00961538	0.00956905	104	1	1.3%	0.0096 [-0.0091, 0.0284]
Ritchey 1993	0.05445026	0.00519189	1910	104	1.8%	0.0545 [0.0443, 0.0646]
Rogula 2007	0.0043315	0.00111596	3463	15	2.2%	0.0043 [0.0021, 0.0065]
Rosen 2009	0.00917431	0.00913213	109	1	1.4%	0.0092 [-0.0087, 0.0271]
Rosin 2007	0.02287582	0.00854678	306	7	1.4%	0.0229 [0.0061, 0.0396]
Ryan 2004	0.03602058	0.00771747	583	21	1.5%	0.0360 [0.0209, 0.0511]
Sai 2007	0.08333333	0.04606423	36	3	0.1%	0.0833 [-0.0070, 0.1736]
Saklani 2012	0.02416918	0.0084412	331	8	1.5%	0.0242 [0.0076, 0.0407]
Salum 2001	0.02511416	0.00747651	438	11	1.6%	0.0251 [0.0105, 0.0398]
Scholin 2011	0.02417303	0.00547824	786	19	1.8%	0.0242 [0.0134, 0.0349]
Sileri 2008	0.10144928	0.01817361	276	28	0.7%	0.1014 [0.0658, 0.1371]
Sowande 2011	0.03030303	0.02984036	33	1	0.3%	0.0303 [-0.0282, 0.0888]
Stanton 2010	0.01293103	0.00741731	232	3	1.6%	0.0129 [-0.0016, 0.0275]
Talwar 1997	0.03571429	0.02479875	56	2	0.4%	0.0357 [-0.0129, 0.0843]
Tashjian 2007	0.04545455	0.04440947	22	1	0.1%	0.0455 [-0.0416, 0.1325]
Taylor 2006	0.01126126	0.00500775	444	5	1.9%	0.0113 [0.0014, 0.0211]
Taylor 2010	0.02189781	0.00721891	411	9	1.6%	0.0219 [0.0077, 0.0360]
Tsao 2007	0.00633484	0.00238675	1105	7	2.1%	0.0063 [0.0017, 0.0110]
van Eijck 2008	0.15646259	0.02996393	147	23	0.3%	0.1565 [0.0977, 0.2152]
Varkarakis 2007	0.03456221	0.00876835	434	15	1.4%	0.0346 [0.0174, 0.0517]
Wakhlu 2000	0.02816901	0.01963595	71	2	0.6%	0.0282 [-0.0103, 0.0667]
Wakhlu 2009	0.01449275	0.01017339	138	2	1.3%	0.0145 [-0.0054, 0.0344]
Wang 1999	0.03	0.01705872	100	3	0.7%	0.0300 [-0.0034, 0.0634]
Wang 2005	0.01315789	0.00924262	152	2	1.4%	0.0132 [-0.0050, 0.0313]
Yamataka 1997	0.02083333	0.00921939	240	5	1.4%	0.0208 [0.0028, 0.0389]
Zbar 1993	0.03296703	0.01323503	182	6	1.0%	0.0330 [0.0070, 0.0589]
Total (95% CI)			**107669**	**2407**	**100.0%**	**0.0244 [0.0210, 0.0279]**

Heterogeneity: Tau² = 0.00; Chi² = 1150.66, df = 86 (P < 0.00001); I² = 93%
Test for overall effect: Z = 13.90 (P < 0.00001)

1.1.2. Funnel plot of studies included in analysis of ASBO



1.2.1. Forest plot of analysis for the incidence of ASBO in studies with adequate description of follow-up for best and worst case scenario analysis.

67 studies included, 39 with no loss to follow-up (at least one long term follow-up moment in each patient included).

Study or Subgroup	Incidence	SE	N Total	ASBO Total	Weight	Incidence IV, Random, 95% CI
Aberg 2007	0.13297872	0.02476436	188	25	0.7%	0.1330 [0.0844, 0.1815]
Abol-Enein 2001	0.00840336	0.00591705	238	2	2.4%	0.0084 [-0.0032, 0.0200]
Adachi 1995	0.34782609	0.09931135	23	8	0.1%	0.3478 [0.1532, 0.5425]
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Arnold 2010	0.06	0.02374868	100	6	0.8%	0.0600 [0.0135, 0.1065]
Atiq 1993	0.2	0.06761234	35	7	0.1%	0.2000 [0.0675, 0.3325]
Bartels 2012	0.04761905	0.01066128	399	19	1.8%	0.0476 [0.0267, 0.0685]
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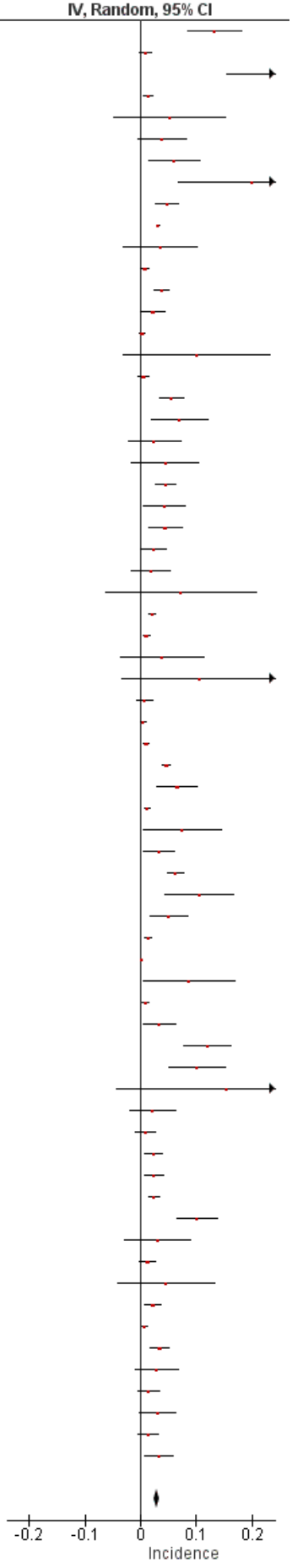
Catena 2012	0.02209945	0.01092695	181	4	1.8%	0.0221 [0.0007, 0.0435]
Champion 2003	0.00335008	0.0023649	597	2	2.7%	0.0034 [-0.0013, 0.0080]
Chang 2012	0.1	0.06708204	20	2	0.1%	0.1000 [-0.0315, 0.2315]
Chin 2007	0.00518135	0.00516791	193	1	2.4%	0.0052 [-0.0049, 0.0153]
Choudhry 2006	0.05555556	0.01125775	414	23	1.7%	0.0556 [0.0335, 0.0776]
Coran 1990	0.07	0.0255147	100	7	0.7%	0.0700 [0.0200, 0.1200]
Dadan 1996	0.02439024	0.02409097	41	1	0.8%	0.0244 [-0.0228, 0.0716]
Dasmahapatra 1991	0.04444444	0.03072065	45	2	0.5%	0.0444 [-0.0158, 0.1047]
Edna 1998	0.04449153	0.00949041	472	21	1.9%	0.0445 [0.0259, 0.0631]
El-Gohary 2010	0.04237288	0.01854391	118	5	1.1%	0.0424 [0.0060, 0.0787]
Els 1993	0.0441989	0.01527743	181	8	1.3%	0.0442 [0.0143, 0.0741]
Escobar 2004	0.02366864	0.01169343	169	4	1.7%	0.0237 [0.0007, 0.0466]
Eshuis 2010	0.01818182	0.01801577	55	1	1.1%	0.0182 [-0.0171, 0.0535]
Fan 2001	0.07142857	0.06883029	14	1	0.1%	0.0714 [-0.0635, 0.2063]
Fazio 2006	0.02057613	0.00344203	1701	35	2.6%	0.0206 [0.0138, 0.0273]
Grant 2008	0.01075269	0.00259385	1581	17	2.7%	0.0108 [0.0057, 0.0158]
Guru 2010	0.03846154	0.03771464	26	1	0.4%	0.0385 [-0.0355, 0.1124]
Ha 2008	0.10526316	0.0704059	19	2	0.1%	0.1053 [-0.0327, 0.2433]
Hayashi 2008	0.00694444	0.00692029	144	1	2.3%	0.0069 [-0.0066, 0.0205]
Hernandez-Richter 1999	0.00413223	0.00238081	726	3	2.7%	0.0041 [-0.0005, 0.0088]
Hwang 2004	0.01020408	0.00271321	1372	14	2.7%	0.0102 [0.0049, 0.0155]
Jeong 2008	0.04601701	0.00412017	2586	119	2.5%	0.0460 [0.0379, 0.0541]
Kawamura 2010	0.06593407	0.01839535	182	12	1.1%	0.0659 [0.0299, 0.1020]
Leung 2009	0.01125492	0.00250247	1777	20	2.7%	0.0113 [0.0064, 0.0162]
Lin 1995	0.07407407	0.03563891	54	4	0.4%	0.0741 [0.0042, 0.1439]
Lumley 2002	0.03246753	0.01428226	154	5	1.4%	0.0325 [0.0045, 0.0605]
MacLean 2002	0.06192237	0.00732706	1082	67	2.2%	0.0619 [0.0476, 0.0763]
Mais 1998	0.10526316	0.03148648	95	10	0.5%	0.1053 [0.0436, 0.1670]
Majewski 2005	0.05095541	0.01755047	157	8	1.1%	0.0510 [0.0166, 0.0854]
Menzies 1990	0.01359122	0.00264728	1913	26	2.7%	0.0136 [0.0084, 0.0188]
Muffly 2012	0.00150557	0.0006728	3321	5	2.7%	0.0015 [0.0002, 0.0028]
Murphy 2006	0.08695652	0.04154492	46	4	0.3%	0.0870 [0.0055, 0.1684]
Nelson 2006	0.00892857	0.00335958	784	7	2.6%	0.0089 [0.0023, 0.0155]
Ng 2009	0.03378378	0.01485116	148	5	1.4%	0.0338 [0.0047, 0.0629]
Nieuwenhuijzen 1998	0.11965812	0.02121724	234	28	0.9%	0.1197 [0.0781, 0.1612]
Nour 1996	0.10144928	0.02570137	138	14	0.7%	0.1014 [0.0511, 0.1518]
Pace 2002	0.15384615	0.10006825	13	2	0.1%	0.1538 [-0.0423, 0.3500]
Ragni 1996	0.02173913	0.02150154	46	1	0.9%	0.0217 [-0.0204, 0.0639]
Rosen 2009	0.00917431	0.00913213	109	1	2.0%	0.0092 [-0.0087, 0.0271]
Rosin 2007	0.02287582	0.00854678	306	7	2.1%	0.0229 [0.0061, 0.0396]
Saklani 2012	0.02416918	0.0084412	331	8	2.1%	0.0242 [0.0076, 0.0407]
Scholin 2011	0.02417303	0.00547824	786	19	2.4%	0.0242 [0.0134, 0.0349]
Sileri 2008	0.10144928	0.01817361	276	28	1.1%	0.1014 [0.0658, 0.1371]
Sowande 2011	0.03030303	0.02984036	33	1	0.5%	0.0303 [-0.0282, 0.0888]
Stanton 2010	0.01293103	0.00741731	232	3	2.2%	0.0129 [-0.0016, 0.0275]
Tashjian 2007	0.04545455	0.04440947	22	1	0.3%	0.0455 [-0.0416, 0.1325]
Taylor 2010	0.02189781	0.00721891	411	9	2.2%	0.0219 [0.0077, 0.0360]
Tsao 2007	0.00633484	0.00238675	1105	7	2.7%	0.0063 [0.0017, 0.0110]
Varkarakis 2007	0.03456221	0.00876835	434	15	2.0%	0.0346 [0.0174, 0.0517]
Wakhlu 2000	0.02816901	0.01963595	71	2	1.0%	0.0282 [-0.0103, 0.0667]
Wakhlu 2009	0.01449275	0.01017339	138	2	1.9%	0.0145 [-0.0054, 0.0344]
Wang 1999	0.03	0.01705872	100	3	1.2%	0.0300 [-0.0034, 0.0634]
Wang 2005	0.01315789	0.00924262	152	2	2.0%	0.0132 [-0.0050, 0.0313]
Zbar 1993	0.03296703	0.01323503	182	6	1.5%	0.0330 [0.0070, 0.0589]
Total (95% CI)			**47556**	**1293**	**100.0%**	**0.0279 [0.0230, 0.0327]**

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 845.51$, df = 66 ($P < 0.00001$); $I^2 = 92\%$

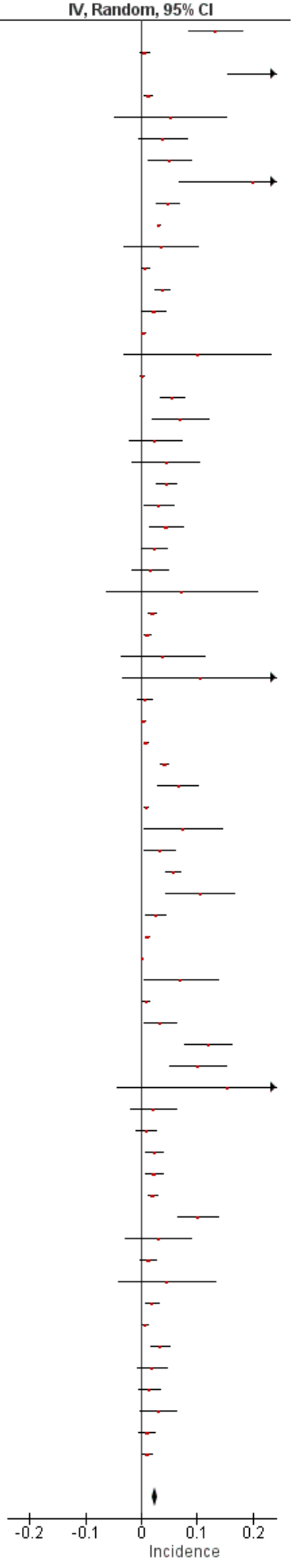
Test for overall effect: $Z = 11.33$ ($P < 0.00001$)



1.2.2. Forest plot of best case analysis for the incidence of ASBO

Study or Subgroup	Incidence	SE	N Total	ASBO Total	Weight	Incidence IV, Random, 95% CI
Aberg 2007	0.13297872	0.02476436	188	25	0.6%	0.1330 [0.0844, 0.1815]
Abol-Enein 2001	0.00581395	0.00409912	344	2	2.5%	0.0058 [-0.0022, 0.0138]
Adachi 1995	0.34782609	0.09931135	23	8	0.0%	0.3478 [0.1532, 0.5425]
Ahlberg 1997	0.01264223	0.00397247	791	10	2.5%	0.0126 [0.0049, 0.0204]
Alexakis 2003	0.05263158	0.05122782	19	1	0.2%	0.0526 [-0.0478, 0.1530]
Amos 1996	0.03846154	0.02177456	78	3	0.7%	0.0385 [-0.0042, 0.0811]
Arnold 2010	0.05042017	0.02005831	119	6	0.8%	0.0504 [0.0111, 0.0897]
Atiq 1993	0.2	0.06761234	35	7	0.1%	0.2000 [0.0675, 0.3325]
Bartels 2012	0.0475	0.01063529	400	19	1.7%	0.0475 [0.0267, 0.0683]
Beck 1999	0.03040398	0.00124851	18912	575	2.7%	0.0304 [0.0280, 0.0329]
Bissada 2004	0.03448276	0.03388301	29	1	0.4%	0.0345 [-0.0319, 0.1009]
Cabot 2010	0.00727273	0.00362312	550	4	2.6%	0.0073 [0.0002, 0.0144]
Capella 2006	0.03730273	0.00717792	697	26	2.1%	0.0373 [0.0232, 0.0514]
Catena 2012	0.02209945	0.01092695	181	4	1.6%	0.0221 [0.0007, 0.0435]
Champion 2003	0.00281294	0.00198625	711	2	2.7%	0.0028 [-0.0011, 0.0067]
Chang 2012	0.1	0.06708204	20	2	0.1%	0.1000 [-0.0315, 0.2315]
Chin 2007	0.002	0.001998	500	1	2.7%	0.0020 [-0.0019, 0.0059]
Choudhry 2006	0.05555556	0.01125775	414	23	1.6%	0.0556 [0.0335, 0.0776]
Coran 1990	0.07	0.0255147	100	7	0.6%	0.0700 [0.0200, 0.1200]
Dadan 1996	0.02439024	0.02409097	41	1	0.6%	0.0244 [-0.0228, 0.0716]
Dasmahapatra 1991	0.04444444	0.03072065	45	2	0.4%	0.0444 [-0.0158, 0.1047]
Edna 1998	0.04449153	0.00949041	472	21	1.8%	0.0445 [0.0259, 0.0631]
El-Gohary 2010	0.0310559	0.01367126	161	5	1.3%	0.0311 [0.0043, 0.0579]
Els 1993	0.0441989	0.01527743	181	8	1.2%	0.0442 [0.0143, 0.0741]
Escobar 2004	0.02366864	0.01169343	169	4	1.6%	0.0237 [0.0007, 0.0466]
Eshuis 2010	0.01666667	0.01652719	60	1	1.1%	0.0167 [-0.0157, 0.0491]
Fan 2001	0.07142857	0.06883029	14	1	0.1%	0.0714 [-0.0635, 0.2063]
Fazio 2006	0.01954216	0.00327079	1791	35	2.6%	0.0195 [0.0131, 0.0260]
Grant 2008	0.01075269	0.00259385	1581	17	2.7%	0.0108 [0.0057, 0.0158]
Guru 2010	0.03846154	0.03771464	26	1	0.3%	0.0385 [-0.0355, 0.1124]
Ha 2008	0.10526316	0.0704059	19	2	0.1%	0.1053 [-0.0327, 0.2433]
Hayashi 2008	0.00666667	0.00664441	150	1	2.2%	0.0067 [-0.0064, 0.0197]
Hernandez-Richter 1999	0.00330033	0.0019023	909	3	2.7%	0.0033 [-0.0004, 0.0070]
Hwang 2004	0.00816327	0.0021728	1715	14	2.7%	0.0082 [0.0039, 0.0124]
Jeong 2008	0.04197531	0.00376625	2835	119	2.6%	0.0420 [0.0346, 0.0494]
Kawamura 2010	0.06593407	0.01839535	182	12	0.9%	0.0659 [0.0299, 0.1020]
Leung 2009	0.00857633	0.00190948	2332	20	2.7%	0.0086 [0.0048, 0.0123]
Lin 1995	0.07407407	0.03563891	54	4	0.3%	0.0741 [0.0042, 0.1439]
Lumley 2002	0.03225806	0.01419166	155	5	1.3%	0.0323 [0.0044, 0.0601]
MacLean 2002	0.05687606	0.00674802	1178	67	2.2%	0.0569 [0.0437, 0.0701]
Mais 1998	0.10526316	0.03148648	95	10	0.4%	0.1053 [0.0436, 0.1670]
Majewski 2005	0.02580645	0.00900546	310	8	1.9%	0.0258 [0.0082, 0.0435]
Menzies 1990	0.01032976	0.00201534	2517	26	2.7%	0.0103 [0.0064, 0.0143]
Muffly 2012	0.00150331	0.00067179	3326	5	2.8%	0.0015 [0.0002, 0.0028]
Murphy 2006	0.07017544	0.03383418	57	4	0.4%	0.0702 [0.0039, 0.1365]
Nelson 2006	0.00892857	0.00335958	784	7	2.6%	0.0089 [0.0023, 0.0155]
Ng 2009	0.03378378	0.01485116	148	5	1.2%	0.0338 [0.0047, 0.0629]
Nieuwenhuijzen 1998	0.11965812	0.02121724	234	28	0.8%	0.1197 [0.0781, 0.1612]
Nour 1996	0.10144928	0.02570137	138	14	0.6%	0.1014 [0.0511, 0.1518]
Pace 2002	0.15384615	0.10006825	13	2	0.0%	0.1538 [-0.0423, 0.3500]
Ragni 1996	0.02173913	0.02150154	46	1	0.8%	0.0217 [-0.0204, 0.0639]
Rosen 2009	0.00917431	0.00913213	109	1	1.9%	0.0092 [-0.0087, 0.0271]
Rosin 2007	0.02287582	0.00854678	306	7	2.0%	0.0229 [0.0061, 0.0396]
Saklani 2012	0.02228412	0.00779035	359	8	2.1%	0.0223 [0.0070, 0.0376]
Scholin 2011	0.01968912	0.0044723	965	19	2.5%	0.0197 [0.0109, 0.0285]
Sileri 2008	0.10144928	0.01817361	276	28	1.0%	0.1014 [0.0658, 0.1371]
Sowande 2011	0.03030303	0.02984036	33	1	0.5%	0.0303 [-0.0282, 0.0888]
Stanton 2010	0.01293103	0.00741731	232	3	2.1%	0.0129 [-0.0016, 0.0275]
Tashjian 2007	0.04545455	0.04440947	22	1	0.2%	0.0455 [-0.0416, 0.1325]
Taylor 2010	0.01894737	0.00625567	475	9	2.3%	0.0189 [0.0067, 0.0312]
Tsao 2007	0.00633484	0.00238675	1105	7	2.7%	0.0063 [0.0017, 0.0110]
Varkarakis 2007	0.03348214	0.00849909	448	15	2.0%	0.0335 [0.0168, 0.0501]
Wakhlu 2000	0.01923077	0.01346682	104	2	1.4%	0.0192 [-0.0072, 0.0456]
Wakhlu 2009	0.01449275	0.01017339	138	2	1.7%	0.0145 [-0.0054, 0.0344]
Wang 1999	0.03	0.01705872	100	3	1.0%	0.0300 [-0.0034, 0.0634]
Wang 2005	0.01036269	0.00728947	193	2	2.1%	0.0104 [-0.0039, 0.0246]
Zbar 1993	0.01058201	0.00429717	567	6	2.5%	0.0106 [0.0022, 0.0190]
Total (95% CI)			**51281**	**1293**	**100.0%**	**0.0247 [0.0204, 0.0290]**

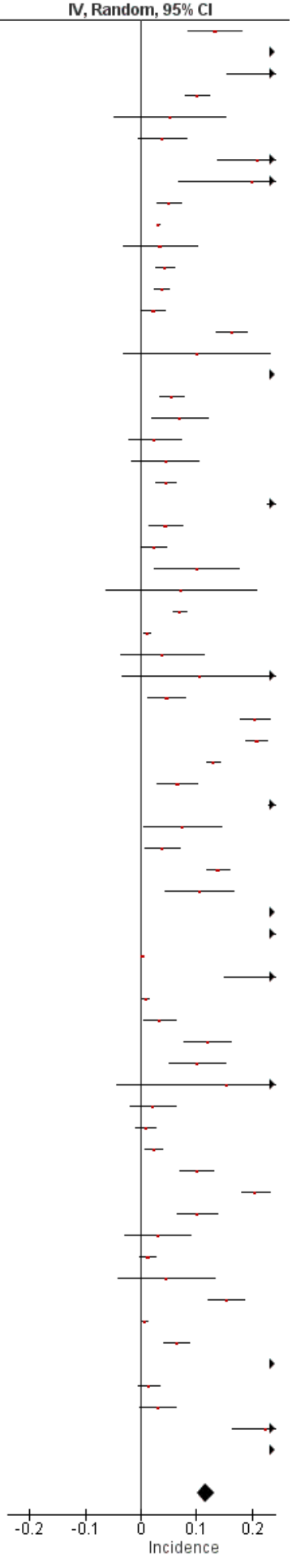
Heterogeneity: Tau² = 0.00; Chi² = 854.28, df = 66 (P < 0.00001); I² = 92%
Test for overall effect: Z = 11.22 (P < 0.00001)



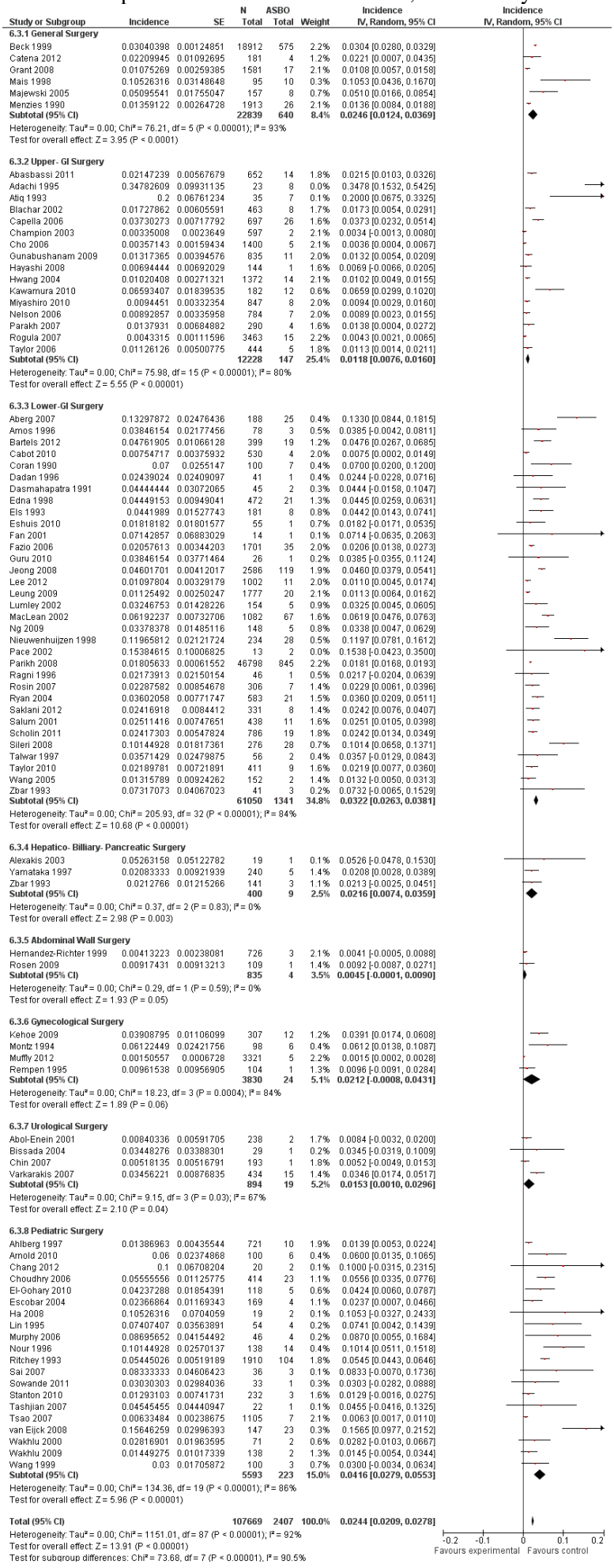
1.2.3. Forest plot of worst case analysis for the incidence of ASBO

Study or Subgroup	Incidence	SE	N Total	ASBO Total	Weight	Incidence IV, Random, 95% CI
Aberg 2007	0.13297872	0.02476436	188	25	1.5%	0.1330 [0.0844, 0.1815]
Abol-Enein 2001	0.31395349	0.02502247	344	108	1.5%	0.3140 [0.2649, 0.3630]
Adachi 1995	0.34782609	0.09931135	23	8	0.5%	0.3478 [0.1532, 0.5425]
Ahlberg 1997	0.1011378	0.0107205	791	80	1.7%	0.1011 [0.0801, 0.1221]
Alexakis 2003	0.05263158	0.05122782	19	1	1.0%	0.0526 [-0.0478, 0.1530]
Amos 1996	0.03846154	0.02177456	78	3	1.6%	0.0385 [-0.0042, 0.0811]
Arnold 2010	0.21008403	0.03734337	119	25	1.3%	0.2101 [0.1369, 0.2833]
Atiq 1993	0.2	0.06761234	35	7	0.8%	0.2000 [0.0675, 0.3325]
Bartels 2012	0.05	0.01089725	400	20	1.7%	0.0500 [0.0286, 0.0714]
Beck 1999	0.03040398	0.00124851	18912	575	1.8%	0.0304 [0.0280, 0.0329]
Bissada 2004	0.03448276	0.03388301	29	1	1.3%	0.0345 [-0.0319, 0.1009]
Cabot 2010	0.04363636	0.00871073	550	24	1.7%	0.0436 [0.0266, 0.0607]
Capella 2006	0.03730273	0.00717792	697	26	1.8%	0.0373 [0.0232, 0.0514]
Catena 2012	0.02209945	0.01092695	181	4	1.7%	0.0221 [0.0007, 0.0435]
Champion 2003	0.16315049	0.01385744	711	116	1.7%	0.1632 [0.1360, 0.1903]
Chang 2012	0.1	0.06708204	20	2	0.8%	0.1000 [-0.0315, 0.2315]
Chin 2007	0.616	0.02175059	500	308	1.6%	0.6160 [0.5734, 0.6586]
Choudhry 2006	0.05555556	0.01125775	414	23	1.7%	0.0556 [0.0335, 0.0776]
Coran 1990	0.07	0.0255147	100	7	1.5%	0.0700 [0.0200, 0.1200]
Dadan 1996	0.02439024	0.02409097	41	1	1.5%	0.0244 [-0.0228, 0.0716]
Dasmahapatra 1991	0.04444444	0.03072065	45	2	1.4%	0.0444 [-0.0158, 0.1047]
Edna 1998	0.04449153	0.00949041	472	21	1.7%	0.0445 [0.0259, 0.0631]
El-Gohary 2010	0.29813665	0.03605131	161	48	1.3%	0.2981 [0.2275, 0.3688]
Els 1993	0.0441989	0.01527743	181	8	1.7%	0.0442 [0.0143, 0.0741]
Escobar 2004	0.02366864	0.01169343	169	4	1.7%	0.0237 [0.0007, 0.0466]
Eshuis 2010	0.1	0.03872983	60	6	1.2%	0.1000 [0.0241, 0.1759]
Fan 2001	0.07142857	0.06883029	14	1	0.7%	0.0714 [-0.0635, 0.2063]
Fazio 2006	0.06979341	0.00602073	1791	125	1.8%	0.0698 [0.0580, 0.0816]
Grant 2008	0.01075269	0.00259385	1581	17	1.8%	0.0108 [0.0057, 0.0158]
Guru 2010	0.03846154	0.03771464	26	1	1.3%	0.0385 [-0.0355, 0.1124]
Ha 2008	0.10526316	0.0704059	19	2	0.7%	0.1053 [-0.0327, 0.2433]
Hayashi 2008	0.04666667	0.01722186	150	7	1.6%	0.0467 [0.0129, 0.0804]
Hernandez-Richter 1999	0.20462046	0.01338073	909	186	1.7%	0.2046 [0.1784, 0.2308]
Hwang 2004	0.20816327	0.00980365	1715	357	1.7%	0.2082 [0.1889, 0.2274]
Jeong 2008	0.129806	0.00631217	2835	368	1.8%	0.1298 [0.1174, 0.1422]
Kawamura 2010	0.06593407	0.01839535	182	12	1.6%	0.0659 [0.0299, 0.1020]
Leung 2009	0.24656947	0.00892539	2332	575	1.7%	0.2466 [0.2291, 0.2641]
Lin 1995	0.07407407	0.03563891	54	4	1.3%	0.0741 [0.0042, 0.1439]
Lumley 2002	0.03870968	0.01549427	155	6	1.7%	0.0387 [0.0083, 0.0691]
MacLean 2002	0.13837012	0.01006025	1178	163	1.7%	0.1384 [0.1187, 0.1581]
Mais 1998	0.10526316	0.03148648	95	10	1.4%	0.1053 [0.0436, 0.1670]
Majewski 2005	0.51935484	0.02837681	310	161	1.4%	0.5194 [0.4637, 0.5750]
Menzies 1990	0.25029797	0.00863438	2517	630	1.7%	0.2503 [0.2334, 0.2672]
Muffly 2012	0.00300661	0.00094934	3326	10	1.8%	0.0030 [0.0011, 0.0049]
Murphy 2006	0.26315789	0.05832544	57	15	0.9%	0.2632 [0.1488, 0.3775]
Nelson 2006	0.00892857	0.00335958	784	7	1.8%	0.0089 [0.0023, 0.0155]
Ng 2009	0.03378378	0.01485116	148	5	1.7%	0.0338 [0.0047, 0.0629]
Nieuwenhuijzen 1998	0.11965812	0.02121724	234	28	1.6%	0.1197 [0.0781, 0.1612]
Nour 1996	0.10144928	0.02570137	138	14	1.5%	0.1014 [0.0511, 0.1518]
Pace 2002	0.15384615	0.10006825	13	2	0.4%	0.1538 [-0.0423, 0.3500]
Ragni 1996	0.02173913	0.02150154	46	1	1.6%	0.0217 [-0.0204, 0.0639]
Rosen 2009	0.00917431	0.00913213	109	1	1.7%	0.0092 [-0.0087, 0.0271]
Rosin 2007	0.02287582	0.00854678	306	7	1.7%	0.0229 [0.0061, 0.0396]
Saklani 2012	0.10027855	0.01585298	359	36	1.7%	0.1003 [0.0692, 0.1313]
Scholin 2011	0.20518135	0.01299988	965	198	1.7%	0.2052 [0.1797, 0.2307]
Sileri 2008	0.10144928	0.01817361	276	28	1.6%	0.1014 [0.0658, 0.1371]
Sowande 2011	0.03030303	0.02984036	33	1	1.4%	0.0303 [-0.0282, 0.0888]
Stanton 2010	0.01293103	0.00741731	232	3	1.8%	0.0129 [-0.0016, 0.0275]
Tashjian 2007	0.04545455	0.04440947	22	1	1.1%	0.0455 [-0.0416, 0.1325]
Taylor 2010	0.15368421	0.01654756	475	73	1.7%	0.1537 [0.1213, 0.1861]
Tsao 2007	0.00633484	0.00238675	1105	7	1.8%	0.0063 [0.0017, 0.0110]
Varkarakis 2007	0.06473214	0.01162489	448	29	1.7%	0.0647 [0.0419, 0.0875]
Wakhlu 2000	0.33653846	0.04633494	104	35	1.1%	0.3365 [0.2457, 0.4274]
Wakhlu 2009	0.01449275	0.01017339	138	2	1.7%	0.0145 [-0.0054, 0.0344]
Wang 1999	0.03	0.01705872	100	3	1.6%	0.0300 [-0.0034, 0.0634]
Wang 2005	0.22279793	0.02995325	193	43	1.4%	0.2228 [0.1641, 0.2815]
Zbar 1993	0.68959436	0.01942988	567	391	1.6%	0.6896 [0.6515, 0.7277]
Total (95% CI)			**51281**	**5018**	**100.0%**	**0.1166 [0.1015, 0.1317]**

Heterogeneity: Tau² = 0.00; Chi² = 6063.01, df = 66 (P < 0.00001); I² = 99%
Test for overall effect: Z = 15.12 (P < 0.00001)

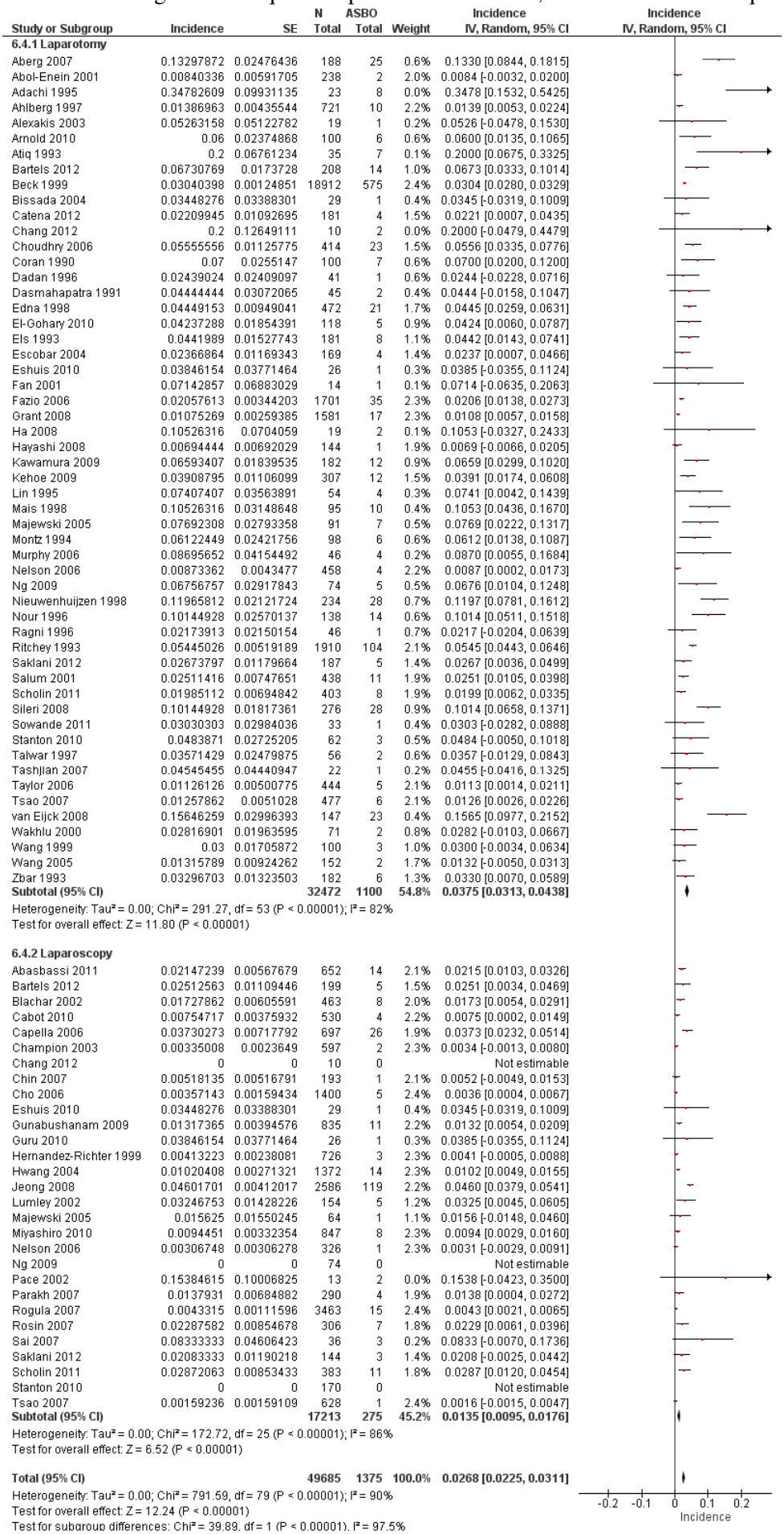


1.3.1. Forest plot of the incidence of ASBO, stratified by anatomical location



1.4.1. Forest plot of the incidence of ASBO, stratified by surgical technique

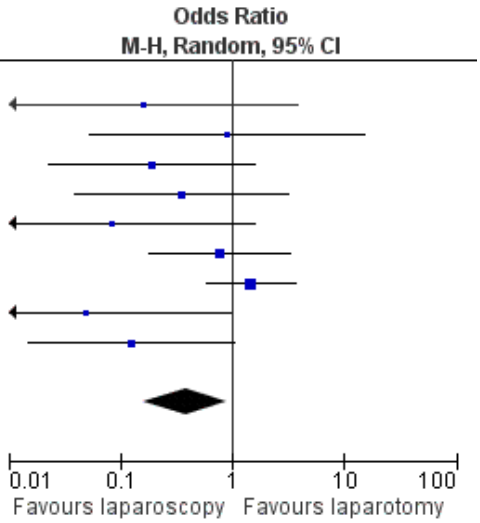
14 excluded. surgical technique not specified in 9 studies, 5 studies both techniques without data per subgroup.



1.4.2. Forest plot for the incidence of ASBO compared between laparoscopy and laparotomy

Study or Subgroup	Laparoscopy Events	Laparoscopy Total	Laparotomy Events	Laparotomy Total	Weight	Odds Ratio M-H, Random, 95% CI
Bartels 2012	199	5	208	14		Not estimable
Chang 2012	0	10	2	10	6.0%	0.16 [0.01, 3.85]
Eshuis 2010	1	29	1	26	7.2%	0.89 [0.05, 15.04]
Majewski 2005	1	64	7	91	10.9%	0.19 [0.02, 1.59]
Nelson 2006	1	326	4	458	10.4%	0.35 [0.04, 3.14]
Ng 2009	0	74	5	74	6.9%	0.08 [0.00, 1.56]
Saklani 2012	3	144	5	187	17.0%	0.77 [0.18, 3.30]
Scholin 2011	11	383	8	403	23.9%	1.46 [0.58, 3.67]
Stanton 2010	0	170	3	62	6.6%	0.05 [0.00, 0.98]
Tsao 2007	1	628	6	477	10.9%	0.13 [0.02, 1.04]
Total (95% CI)		**1833**		**1802**	**100.0%**	**0.38 [0.16, 0.91]**
Total events	217		249			

Heterogeneity: Tau² = 0.58; Chi² = 12.69, df = 8 (P = 0.12); I² = 37%
Test for overall effect: Z = 2.19 (P = 0.03)



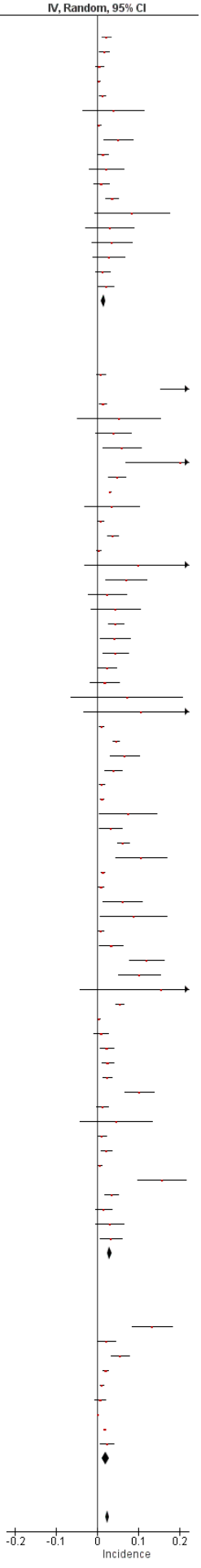
1.5.1. Sensitivity analysis of the incidence of ASBO, impact of individual studies

Study	Point estimate	95%CI
All available studies	0.0244	0.0210-0.0279
Abasbassi 2011	0.0245	0.0210-0.0280
Aberg 2007	0.0239	0.0205-0.0273
Abol-Enein 2001	0.0247	0.0212-0.0282
Adachi 1995	0.0243	0.0208-0.0277
Ahlberg 1997	0.0247	0.0212-0.0281
Alexakis 2003	0.0244	0.0209-0.0278
Amos 1996	0.0243	0.0209-0.0278
Arnold 2010	0.0242	0.0208-0.0277
Atiq 1993	0.0243	0.0208-0.0277
Bartels 2012	0.0241	0.0206-0.0276
Beck 1999	0.0237	0.0204-0.0270
Bissada 2004	0.0244	0.0209-0.0278
Blachar 2002	0.0246	0.0211-0.0280
Cabot 2010	0.0248	0.0213-0.0283
Capella 2006	0.0242	0.0207-0.0276
Catena 2012	0.0244	0.0210-0.0279
Champion 2003	0.0249	0.0214-0.0284
Chang 2012	0.0244	0.0209-0.0278
Chin 2007	0.0248	0.0213-0.0283
Cho 2006	0.0250	0.0215-0.0285
Choudhry 2006	0.0240	0.0206-0.0275
Coran 1990	0.0242	0.0208-0.0277
Dadan 1996	0.0244	0.0210-0.0279
Dasmahapatra 1991	0.0244	0.0209-0.0278
Edna 1998	0.0241	0.0207-0.0276
El-Gohary 2010	0.0243	0.0208-0.0277
Els 1993	0.0242	0.0208-0.0277
Escobar 2004	0.0244	0.0210-0.0279
Eshuis 2010	0.0245	0.0210-0.0279
Fan 2001	0.0244	0.0209-0.0278
Fazio 2006	0.0245	0.0210-0.0280
Grant 2008	0.0248	0.0213-0.0283
Gunabushanam 2009	0.0247	0.0212-0.0282
Guru 2010	0.0244	0.0209-0.0278
Ha 2008	0.0244	0.0209-0.0278
Hayashi 2008	0.0247	0.0212-0.0282
Hernandez-Richter 1999	0.0249	0.0214-0.0284
Hwang 2004	0.0248	0.0213-0.0283
Jeong 2008	0.0238	0.0204-0.0272
Kawamura 2009	0.0241	0.0207-0.0276
Kehoe 2009	0.0242	0.0208-0.0277
Lee 2012	0.0248	0.0213-0.0282
Leung 2009	0.0248	0.0213-0.0283
Lin 1995	0.0243	0.0209-0.0277
Lumley 2002	0.0243	0.0209-0.0278
MacLean 2002	0.0237	0.0202-0.0271
Mais 1998	0.0242	0.0207-0.0276
Majewski 2005	0.0242	0.0208-0.0277
Menzies 1990	0.0247	0.0272-0.0282
Miyashiro 2010	0.0248	0.0213-0.0283
Montz 1994	0.0242	0.0208-0.0277
Muffly 2012	0.0246	0.0213-0.0280
Murphy 2006	0.0243	0.0209-0.0277
Nelson 2006	0.0248	0.0213-0.0283
Ng 2009	0.0243	0.0209-0.0278
Nieuwenhuijzen 1998	0.0238	0.0204-0.0273
Nour 1996	0.0241	0.0206-0.0275
Pace 2002	0.0244	0.0209-0.0278
Parakh 2007	0.0246	0.0211-0.0281
Parikh 2008	0.0254	0.0216-0.0291
Ragni 1996	0.0244	0.0210-0.0279

Rempen 1995	0.0246	0.0212-0.0281
Ritchey 1993	0.0236	0.0202-0.0270
Rogula 2007	0.0251	0.0216-0.0287
Rosen 2009	0.0246	0.0212-0.0281
Rosin 2007	0.0244	0.0210-0.0279
Ryan 2004	0.0242	0.0208-0.0277
Sai 2007	0.0243	0.0209-0.0278
Saklani 2012	0.0244	0.0210-0.0279
Salum 2001	0.0244	0.0209-0.0279
Scholin 2011	0.0244	0.0210-0.0279
Sileri 2008	0.0238	0.0204-0.0273
Sowande 2011	0.0244	0.0210-0.0278
Stanton 2010	0.0246	0.0211-0.0281
Talwar 1997	0.0244	0.0209-0.0278
Tashjian 2007	0.0244	0.0209-0.0278
Taylor 2006	0.0247	0.0212-0.0282
Taylor 2010	0.0245	0.0210-0.0279
Tsao 2007	0.0249	0.0214-0.0284
van Eijck 2008	0.0239	0.0205-0.0274
Varkarakis 2007	0.0243	0.0208-0.0277
Wakhlu 2000	0.0244	0.0209-0.0278
Wakhlu 2009	0.0246	0.0211-0.0280
Wang 1999	0.0244	0.0209-0.0278
Wang 2005	0.0246	0.0211-0.0281
Yamataka 1997	0.0245	0.0210-0.0279
Zbar 1993	0.0243	0.0209-0.0278

1.6.1. Sensitivity analysis of the incidence of ASBO, stratified by quality of study

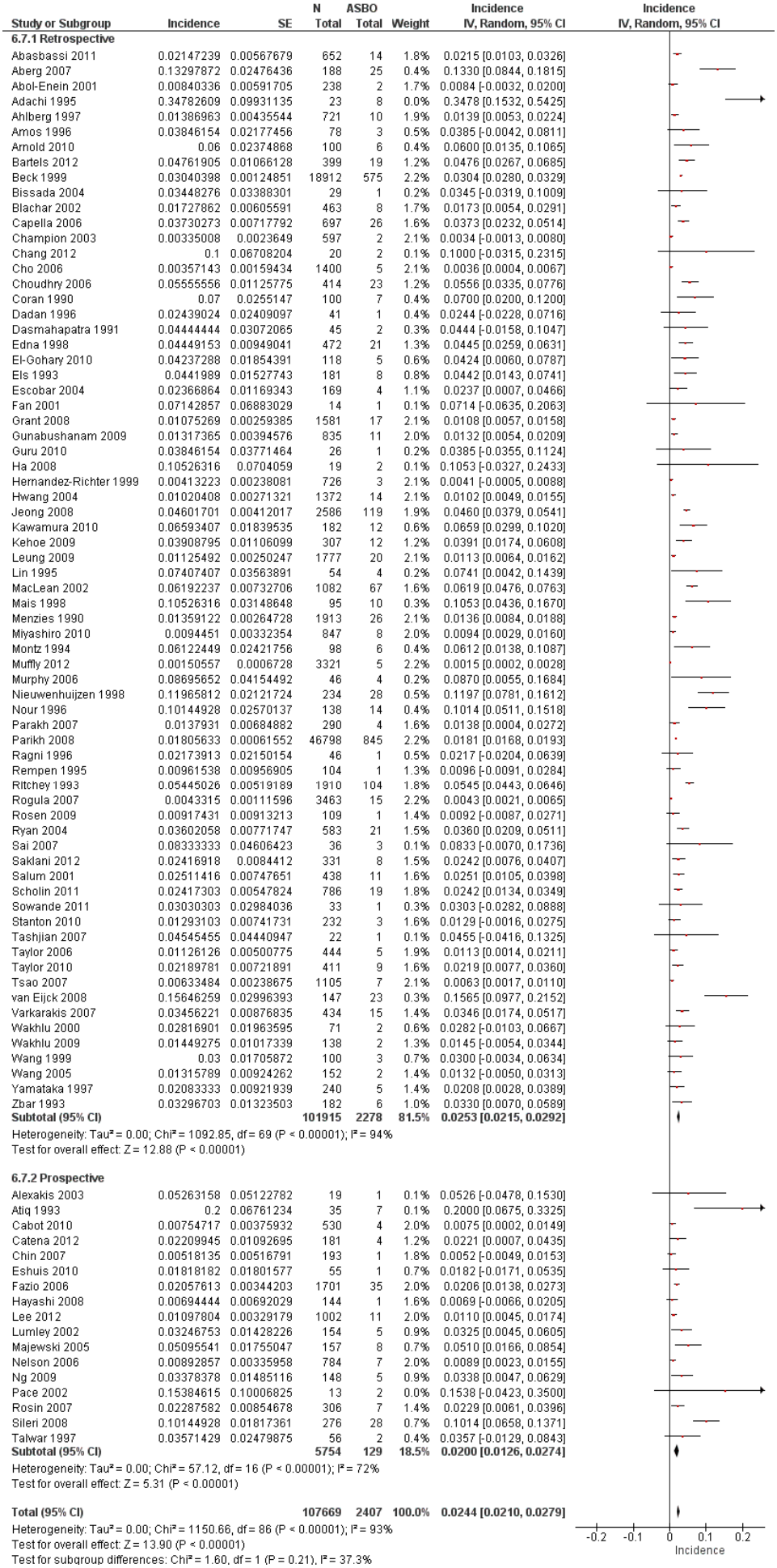
Study or Subgroup	Incidence	SE	N Total	ASBO Total	Weight	Incidence IV, Random, 95% CI
6.6.1 Low Quality Studies						
Abasbassi 2011	0.02147239	0.00567679	652	14	1.8%	0.0215 [0.0103, 0.0326]
Blachar 2002	0.01727862	0.00605591	463	8	1.7%	0.0173 [0.0054, 0.0291]
Chin 2007	0.00518135	0.00516791	193	1	1.8%	0.0052 [-0.0049, 0.0153]
Cho 2006	0.00357143	0.00159434	1400	5	2.1%	0.0036 [0.0004, 0.0067]
Gunabushanam 2009	0.01317365	0.00394576	835	11	2.0%	0.0132 [0.0054, 0.0209]
Guru 2010	0.03846154	0.03771464	26	1	0.2%	0.0385 [-0.0355, 0.1124]
Hernandez-Richter 1999	0.00413223	0.00238081	726	3	2.1%	0.0041 [-0.0005, 0.0088]
Majewski 2005	0.05095541	0.01755047	157	8	0.7%	0.0510 [0.0166, 0.0854]
Parakh 2007	0.0137931	0.00684882	290	4	1.6%	0.0138 [0.0004, 0.0272]
Ragni 1996	0.02173913	0.02150154	46	1	0.5%	0.0217 [-0.0204, 0.0639]
Rempen 1995	0.00961538	0.00956905	104	1	1.3%	0.0096 [-0.0091, 0.0284]
Ryan 2004	0.03602058	0.00771747	583	21	1.5%	0.0360 [0.0209, 0.0511]
Sai 2007	0.08333333	0.04606423	36	3	0.1%	0.0833 [-0.0070, 0.1736]
Sowande 2011	0.03030303	0.02984036	33	1	0.3%	0.0303 [-0.0282, 0.0888]
Talwar 1997	0.03571429	0.02479875	56	2	0.4%	0.0357 [-0.0129, 0.0843]
Wakhlu 2000	0.02816901	0.01963595	71	2	0.6%	0.0282 [-0.0103, 0.0667]
Wang 2005	0.01315789	0.00924262	152	2	1.4%	0.0132 [-0.0050, 0.0313]
Yamataka 1997	0.02083333	0.00921939	240	5	1.4%	0.0208 [0.0028, 0.0389]
Subtotal (95% CI)			**6063**	**93**	**21.6%**	**0.0148 [0.0094, 0.0202]**
Heterogeneity: Tau² = 0.00; Chi² = 48.96, df = 17 (P < 0.0001); I² = 65%						
Test for overall effect: Z = 5.39 (P < 0.00001)						
6.6.2 Intermediate Quality Studies						
Abol-Enein 2001	0.00840336	0.00591705	238	2	1.7%	0.0084 [-0.0032, 0.0200]
Adachi 1995	0.34782609	0.09931135	23	8	0.0%	0.3478 [0.1532, 0.5425]
Ahlberg 1997	0.01386963	0.00435544	721	10	1.9%	0.0139 [0.0053, 0.0224]
Alexakis 2003	0.05263158	0.05122782	19	1	0.1%	0.0526 [-0.0478, 0.1530]
Amos 1996	0.03846154	0.02177456	78	3	0.5%	0.0385 [-0.0042, 0.0811]
Arnold 2010	0.06	0.02374868	100	6	0.4%	0.0600 [0.0135, 0.1065]
Atiq 1993	0.2	0.06761234	35	7	0.1%	0.2000 [0.0675, 0.3325]
Bartels 2012	0.04761905	0.01066128	399	19	1.2%	0.0476 [0.0267, 0.0685]
Beck 1999	0.03040398	0.00124851	18912	575	2.2%	0.0304 [0.0280, 0.0329]
Bissada 2004	0.03448276	0.03388301	29	1	0.2%	0.0345 [-0.0319, 0.1009]
Cabot 2010	0.00754717	0.00375932	530	4	2.0%	0.0075 [0.0002, 0.0149]
Capella 2006	0.03730273	0.00717792	697	26	1.6%	0.0373 [0.0232, 0.0514]
Champion 2003	0.00335008	0.0023649	597	2	2.1%	0.0034 [-0.0013, 0.0080]
Chang 2012	0.1	0.06708204	20	2	0.1%	0.1000 [-0.0315, 0.2315]
Coran 1990	0.07	0.0255147	100	7	0.4%	0.0700 [0.0200, 0.1200]
Dadan 1996	0.02439024	0.02409097	41	1	0.4%	0.0244 [-0.0228, 0.0716]
Dasmahapatra 1991	0.04444444	0.03072065	45	2	0.3%	0.0444 [-0.0158, 0.1047]
Edna 1998	0.04449153	0.00949041	472	21	1.3%	0.0445 [0.0259, 0.0631]
El-Gohary 2010	0.04237288	0.01854391	118	5	0.6%	0.0424 [0.0060, 0.0787]
Els 1993	0.0441989	0.01527743	181	8	0.8%	0.0442 [0.0143, 0.0741]
Escobar 2004	0.02366864	0.01169343	169	4	1.1%	0.0237 [0.0007, 0.0466]
Eshuis 2010	0.01818182	0.01801577	55	1	0.7%	0.0182 [-0.0171, 0.0535]
Fan 2001	0.07142857	0.06883029	14	1	0.1%	0.0714 [-0.0635, 0.2063]
Ha 2008	0.10526316	0.0704059	19	2	0.1%	0.1053 [-0.0327, 0.2433]
Hwang 2004	0.01020408	0.00271321	1372	14	2.1%	0.0102 [0.0049, 0.0155]
Jeong 2008	0.04601701	0.00412017	2586	119	1.9%	0.0460 [0.0379, 0.0541]
Kawamura 2009	0.06593407	0.01839535	182	12	0.6%	0.0659 [0.0299, 0.1020]
Kehoe 2009	0.03908795	0.01106099	307	12	1.2%	0.0391 [0.0174, 0.0608]
Lee 2012	0.01097804	0.00329179	1002	11	2.0%	0.0110 [0.0045, 0.0174]
Leung 2009	0.01125492	0.00250247	1777	20	2.1%	0.0113 [0.0064, 0.0162]
Lin 1995	0.07407407	0.03563891	54	4	0.2%	0.0741 [0.0042, 0.1439]
Lumley 2002	0.03246753	0.01428226	154	5	0.9%	0.0325 [0.0045, 0.0605]
MacLean 2002	0.06192237	0.00732706	1082	67	1.6%	0.0619 [0.0476, 0.0763]
Mais 1998	0.10526316	0.03148648	95	10	0.3%	0.1053 [0.0436, 0.1670]
Menzies 1990	0.01359122	0.00264728	1913	26	2.1%	0.0136 [0.0084, 0.0188]
Miyashiro 2010	0.0094451	0.00332354	847	8	2.0%	0.0094 [0.0029, 0.0160]
Montz 1994	0.06122449	0.02421756	98	6	0.4%	0.0612 [0.0138, 0.1087]
Murphy 2006	0.08695652	0.04154492	46	4	0.2%	0.0870 [0.0055, 0.1684]
Nelson 2006	0.00892857	0.00335958	784	7	2.0%	0.0089 [0.0023, 0.0155]
Ng 2009	0.03378378	0.01485116	148	5	0.9%	0.0338 [0.0047, 0.0629]
Nieuwenhuijzen 1998	0.11965812	0.02121724	234	28	0.5%	0.1197 [0.0781, 0.1612]
Nour 1996	0.10144928	0.02570137	138	14	0.4%	0.1014 [0.0511, 0.1518]
Pace 2002	0.15384615	0.10006825	13	2	0.0%	0.1538 [-0.0423, 0.3500]
Ritchey 1993	0.05445026	0.00519189	1910	104	1.8%	0.0545 [0.0443, 0.0646]
Rogula 2007	0.0043315	0.00111596	3463	15	2.2%	0.0043 [0.0021, 0.0065]
Rosen 2009	0.00917431	0.00913213	109	1	1.4%	0.0092 [-0.0087, 0.0271]
Rosin 2007	0.02287582	0.00854678	306	7	1.4%	0.0229 [0.0061, 0.0396]
Salum 2001	0.02511416	0.00747651	438	11	1.6%	0.0251 [0.0105, 0.0398]
Scholin 2011	0.02417303	0.00547824	786	19	1.8%	0.0242 [0.0134, 0.0349]
Sileri 2008	0.10144928	0.01817361	276	28	0.7%	0.1014 [0.0658, 0.1371]
Stanton 2010	0.01293103	0.00741731	232	3	1.6%	0.0129 [-0.0016, 0.0275]
Tashjian 2007	0.04545455	0.04440947	22	1	0.1%	0.0455 [-0.0416, 0.1325]
Taylor 2006	0.01126126	0.00500775	444	5	1.9%	0.0113 [0.0014, 0.0211]
Taylor 2010	0.02189781	0.00721891	411	9	1.6%	0.0219 [0.0077, 0.0360]
Tsao 2007	0.00633484	0.00238675	1105	7	2.1%	0.0063 [0.0017, 0.0110]
van Eijck 2008	0.15646259	0.02996393	147	23	0.3%	0.1565 [0.0977, 0.2152]
Varkarakis 2007	0.03456221	0.00876835	434	15	1.4%	0.0346 [0.0174, 0.0517]
Wakhlu 2009	0.01449275	0.01017339	138	2	1.3%	0.0145 [-0.0054, 0.0344]
Wang 1999	0.03	0.01705872	100	3	0.7%	0.0300 [-0.0034, 0.0634]
Zbar 1993	0.03296703	0.01323503	182	6	1.0%	0.0330 [0.0070, 0.0589]
Subtotal (95% CI)			**46947**	**1351**	**64.1%**	**0.0298 [0.0248, 0.0349]**
Heterogeneity: Tau² = 0.00; Chi² = 653.14, df = 59 (P < 0.00001); I² = 91%						
Test for overall effect: Z = 11.50 (P < 0.00001)						
6.6.3 High Quality Studies						
Aberg 2007	0.13297872	0.02476436	188	25	0.4%	0.1330 [0.0844, 0.1815]
Catena 2012	0.02209945	0.01092695	181	4	1.2%	0.0221 [0.0007, 0.0435]
Choudhry 2006	0.05555556	0.01125775	414	23	1.2%	0.0556 [0.0335, 0.0776]
Fazio 2006	0.02057613	0.00344203	1701	35	2.0%	0.0206 [0.0138, 0.0273]
Grant 2008	0.01075269	0.00259385	1581	17	2.1%	0.0108 [0.0057, 0.0158]
Hayashi 2008	0.00694444	0.00692029	144	1	1.6%	0.0069 [-0.0066, 0.0205]
Muffly 2012	0.00150557	0.0006728	3321	5	2.2%	0.0015 [0.0002, 0.0028]
Parikh 2008	0.01805633	0.00061552	46798	845	2.2%	0.0181 [0.0168, 0.0193]
Saklani 2012	0.02416918	0.0084412	331	8	1.5%	0.0242 [0.0076, 0.0407]
Subtotal (95% CI)			**54659**	**963**	**14.3%**	**0.0206 [0.0117, 0.0295]**
Heterogeneity: Tau² = 0.00; Chi² = 381.91, df = 8 (P < 0.00001); I² = 98%						
Test for overall effect: Z = 4.55 (P < 0.00001)						
Total (95% CI)			**107669**	**2407**	**100.0%**	**0.0244 [0.0210, 0.0279]**
Heterogeneity: Tau² = 0.00; Chi² = 1150.66, df = 86 (P < 0.00001); I² = 93%						
Test for overall effect: Z = 13.90 (P < 0.00001)						
Test for subgroup differences: Chi² = 15.94, df = 2 (P = 0.0003), I² = 87.5%						



1.6.2. Table of sensitivity analysis of the incidence of ASBO, impact of quality of studies

Study	Point estimate	95%CI
All available studies	0.0244	0.0210-0.0279
Low Quality studies only	0.0148	0.0094-0.0202
Intermediate Quality studies only	0.0298	0.0248-0.0349
High studies only	0.0206	0.0210-0.0279

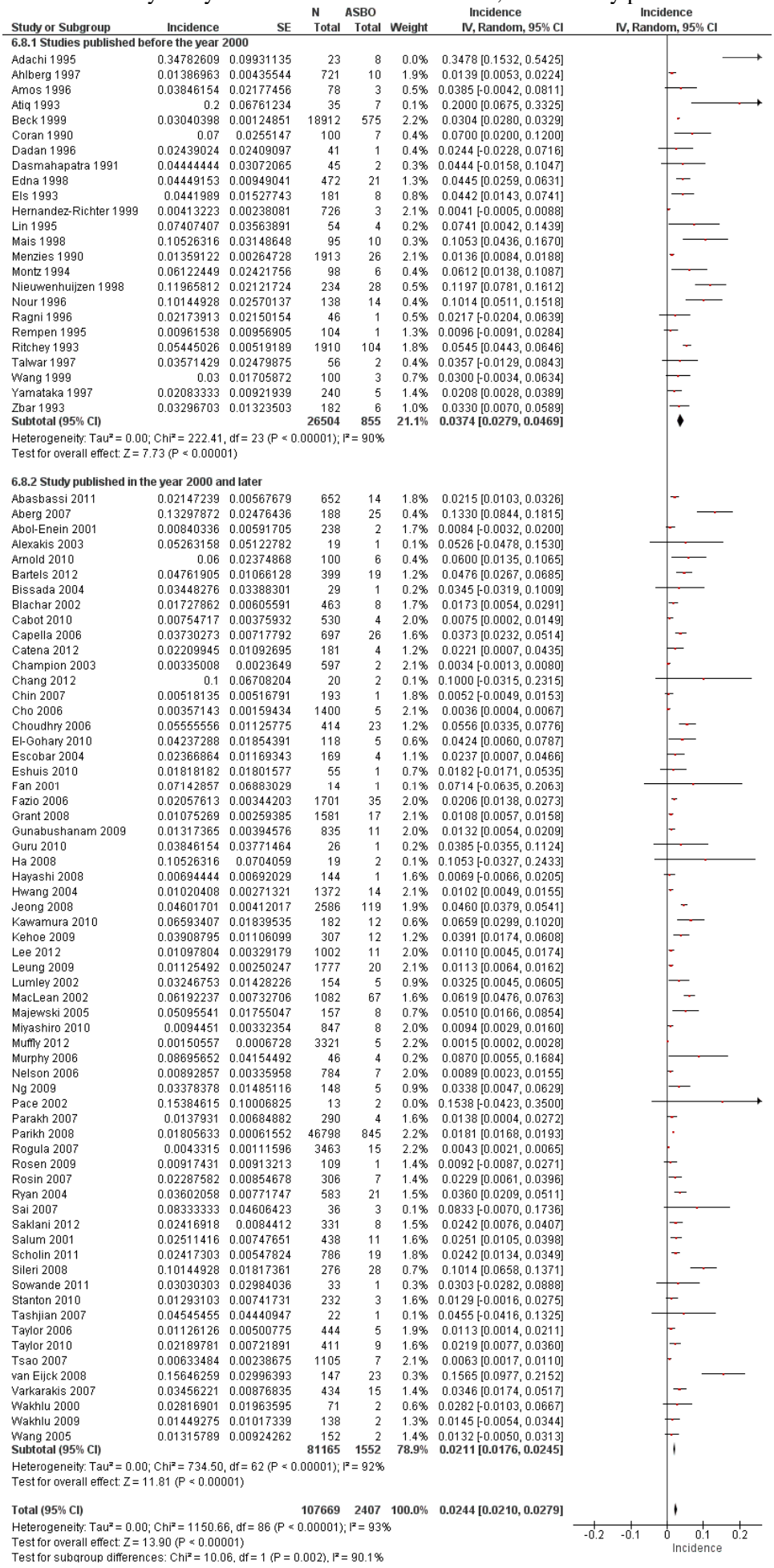
1.7.1. Sensitivity analysis of the incidence of ASBO, stratified by study design



1.7.2. Table of sensitivity analysis of the incidence of ASBO, impact of study design

Study	Point estimate	95%CI
All available studies	0.0244	0.0210-0.0279
Retrospective studies only	0.0253	0.0215-0.0292
Prospective studies only	0.0200	0.0126-0.0274

1.8.1. Sensitivity analysis of the incidence of ASBO, stratified by publication date



1.8.2. Table of sensitivity analysis of the incidence of ASBO, impact of publication date

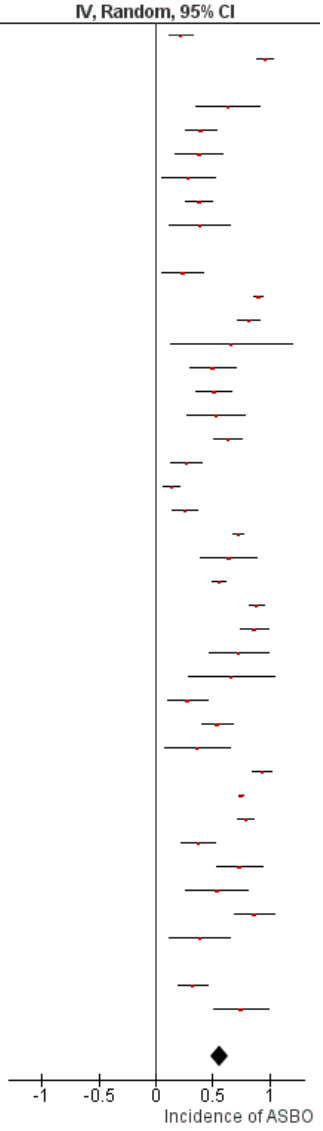
Study	Point estimate	95%CI
All available studies	0.0244	0.0210-0.0279
Studies published before the year 2000 only	0.0374	0.0279-0.0469
Studies published in the year 2000 and later only	0.0211	0.0210-0.0279

2.1.1 Forest Plot of the cross sectional incidence of ASBO, including all studies

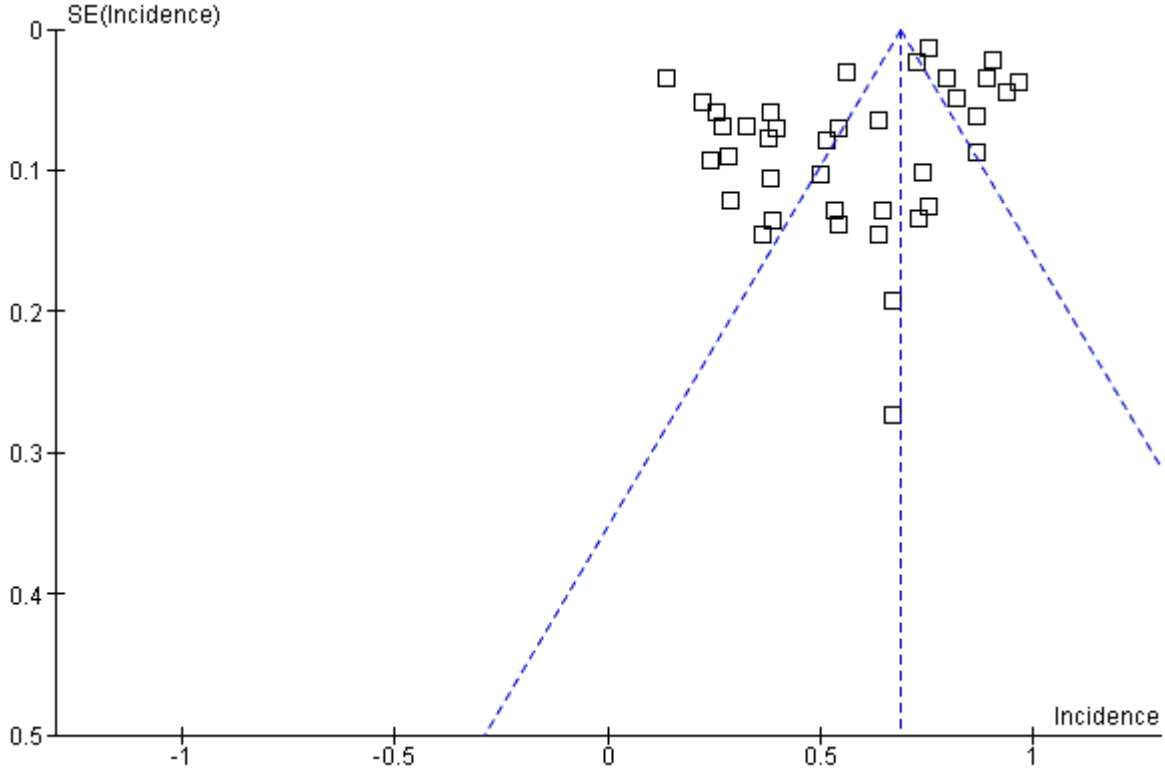
Study or Subgroup	Incidence	SE	Experimental Total	Control Total	Weight	Incidence IV, Random, 95% CI
Abasbassi 2011	0.22222222	0.05237828	63	14	2.8%	0.22 [0.12, 0.32]
Aberg 2007	0.96153846	0.03771464	26	25	2.9%	0.96 [0.89, 1.04]
Adachi 1995	1	0	8	8		Not estimable
Atiq 1993	0.63636364	0.14504073	11	7	2.1%	0.64 [0.35, 0.92]
Blachar 2001	0.39583333	0.07058525	48	19	2.7%	0.40 [0.26, 0.53]
Blachar 2002	0.38095238	0.10597117	21	8	2.5%	0.38 [0.17, 0.59]
Cabot 2010	0.28571429	0.12073632	14	4	2.3%	0.29 [0.05, 0.52]
Capella 2006	0.38235294	0.05893156	68	26	2.8%	0.38 [0.27, 0.50]
Champion 2003	0.38461538	0.134932	13	5	2.2%	0.38 [0.12, 0.65]
Chen 1999	1	0	34	34		Not estimable
Cho 2006	0.23809524	0.09294286	21	5	2.6%	0.24 [0.06, 0.42]
Chou 2005	0.90340909	0.02226661	176	159	3.0%	0.90 [0.86, 0.95]
Cox 1993	0.81967213	0.0492251	61	50	2.9%	0.82 [0.72, 0.92]
Dasmahapatra 1991	0.66666667	0.27216553	3	2	1.2%	0.67 [0.13, 1.20]
Duron 2008	0.5	0.10206207	24	12	2.5%	0.50 [0.30, 0.70]
Edna 1998	0.51219512	0.07806365	41	21	2.7%	0.51 [0.36, 0.67]
Els 1993	0.53333333	0.12881224	15	8	2.3%	0.53 [0.28, 0.79]
Fazio 2006	0.63636364	0.06486419	55	35	2.8%	0.64 [0.51, 0.76]
Gunabushanam 2009	0.26829268	0.06919603	41	11	2.7%	0.27 [0.13, 0.40]
Husain 2007	0.1372549	0.03407259	102	14	2.9%	0.14 [0.07, 0.20]
Hwang 2004	0.25454545	0.05873702	55	14	2.8%	0.25 [0.14, 0.37]
Johanet 1999	0.72631579	0.02287156	380	276	3.0%	0.73 [0.68, 0.77]
Klausner 1995	0.64285714	0.12806021	14	9	2.3%	0.64 [0.39, 0.89]
Lo 2007	0.55719557	0.03017346	271	151	2.9%	0.56 [0.50, 0.62]
MacLean 2002	0.8875	0.03532771	80	71	2.9%	0.89 [0.82, 0.96]
Miller 2002	0.86666667	0.06206329	30	26	2.8%	0.87 [0.75, 0.99]
Miyashiro 2010	0.72727273	0.13428163	11	8	2.2%	0.73 [0.46, 0.99]
Murphy 2006	0.66666667	0.19245009	6	4	1.8%	0.67 [0.29, 1.04]
Nelson 2006	0.28	0.08979978	25	7	2.6%	0.28 [0.10, 0.46]
Olver 1990	0.54	0.07048404	50	27	2.7%	0.54 [0.40, 0.68]
Parakh 2007	0.36363636	0.14504073	11	4	2.1%	0.36 [0.08, 0.65]
Parent 1995	0.93548387	0.04412365	31	29	2.9%	0.94 [0.85, 1.02]
Parikh 2008	0.75044405	0.01289656	1126	845	3.0%	0.75 [0.73, 0.78]
Ritchey 1993	0.79389313	0.03534204	131	104	2.9%	0.79 [0.72, 0.86]
Rogula 2007	0.375	0.07654655	40	15	2.7%	0.38 [0.22, 0.53]
Rosin 2000	0.73684211	0.10102262	19	14	2.5%	0.74 [0.54, 0.93]
Rosin 2007	0.53846154	0.13826416	13	7	2.2%	0.54 [0.27, 0.81]
Suzuki 2003	0.86666667	0.08777075	15	13	2.6%	0.87 [0.69, 1.04]
Taylor 2006	0.38461538	0.134932	13	5	2.2%	0.38 [0.12, 0.65]
van Eijck 2008	1	0	23	23		Not estimable
Varkarakis 2007	0.32608696	0.06911777	46	15	2.7%	0.33 [0.19, 0.46]
Yamataka 1997	0.75	0.125	12	9	2.3%	0.75 [0.51, 0.99]
Total (95% CI)			**3247**	**2143**	**100.0%**	**0.56 [0.49, 0.64]**

Heterogeneity: $Tau^2 = 0.05$; $Chi^2 = 898.54$, df = 38 (P < 0.00001); $I^2 = 96\%$

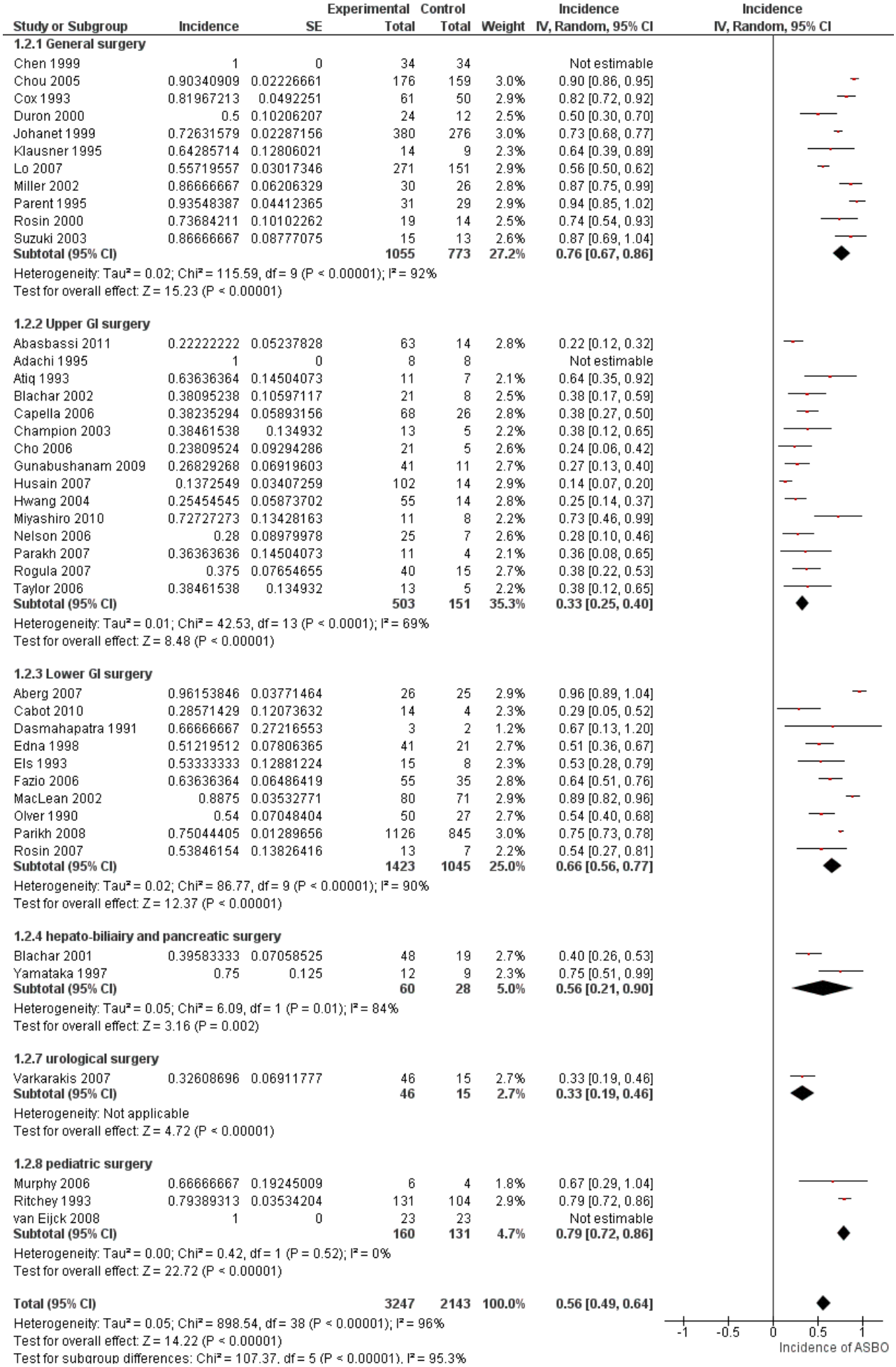
Test for overall effect: Z = 14.22 (P < 0.00001)



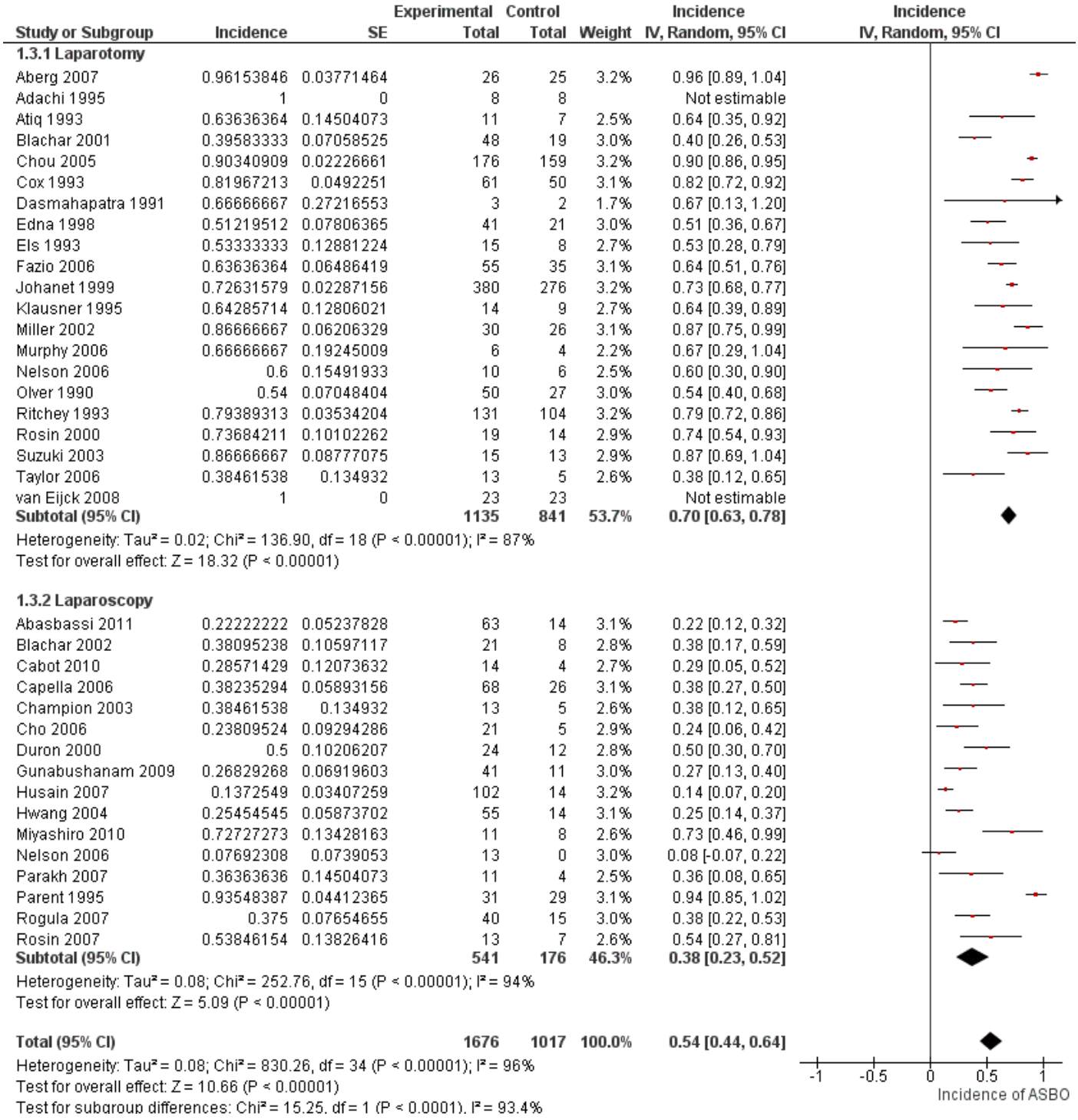
2.1.2. Funnel plot of studies included in analysis of ASBO



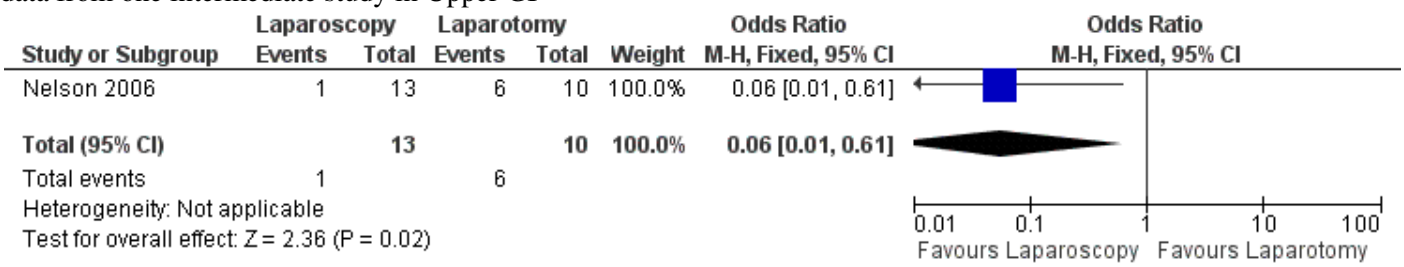
2.2.1 Forest Plot of the cross sectional incidence of ASBO, stratified by anatomical location



2.3.1. Forest plot of the cross sectional incidence of ASBO, stratified by surgical technique
6 studies excluded. Surgical technique not specified in 6 studies.



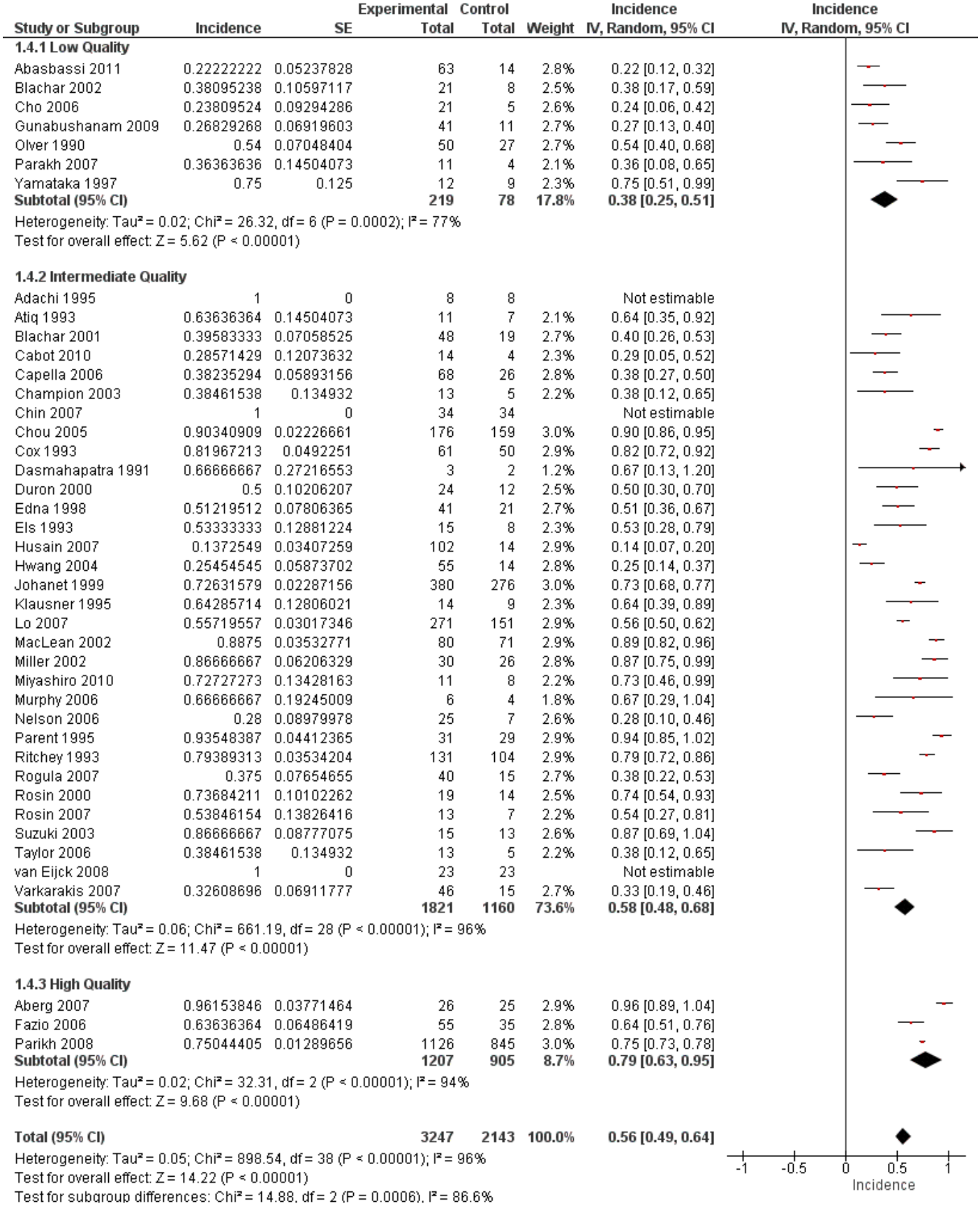
2.3.2. Forest Plot of the cross sectional incidence of ASBO compared between laparoscopy and laparotomy
data from one intermediate study in Upper GI



2.4.1. Sensitivity analysis of the cross-sectional incidence of ASBO, impact of individual sudies

Study	Point estimate	95% CI
All studies included	0.56	0.49-0.64
Abasbassi 2011	0.57	0.50-0.65
Aberg 2007	0.55	0.47-0.63
Adachi 1995	0.56	0.49-0.64
Atiq 1993	0.56	0.48-0.64
Blachar 2001	0.57	0.49-0.65
Blachar 2002	0.57	0.49-0.65
Cabot 2010	0.57	0.49-0.65
Capella 2006	0.57	0.49-0.65
Champion 2003	0.57	0.49-0.65
Chen 1999	0.56	0.49-0.64
Cho 2006	0.57	0.49-0.65
Chou 2005	0.55	0.47-0.63
Cox 1993	0.56	0.48-0.63
Dasmahapatra 1991	0.56	0.48-0.64
Duron 2008	0.56	0.49-0.64
Edna 1998	0.56	0.49-0.64
Els 1993	0.56	0.48-0.64
Fazio 2006	0.56	0.48-0.64
Gunabushanam 2009	0.57	0.49-0.65
Husain 2007	0.58	0.51-0.65
Hwang 2004	0.57	0.49-0.65
Johanet 1999	0.56	0.47-0.64
Klausner 1995	0.56	0.48-0.64
Lo 2007	0.56	0.48-0.64
MacLean 2002	0.55	0.47-0.63
Miller 2002	0.55	0.48-0.63
Miyashiro 2010	0.56	0.48-0.64
Murphy 2006	0.56	0.48-0.64
Nelson 2006	0.57	0.49-0.65
Olver 1990	0.56	0.48-0.64
Parakh 2007	0.57	0.49-0.65
Parent 1995	0.55	0.47-0.63
Parikh 2008	0.56	0.47-0.65
Ritchey 1993	0.56	0.48-0.64
Rogula 2007	0.57	0.49-0.65
Rosin 2000	0.56	0.48-0.64
Rosin 2007	0.56	0.48-0.64
Suzuki 2003	0.55	0.48-0.63
Taylor 2006	0.57	0.49-0.65
van Eijck 2008	0.56	0.49-0.64
Varkarakis 2007	0.57	0.49-0.65
Yamataka 1997	0.56	0.48-0.64

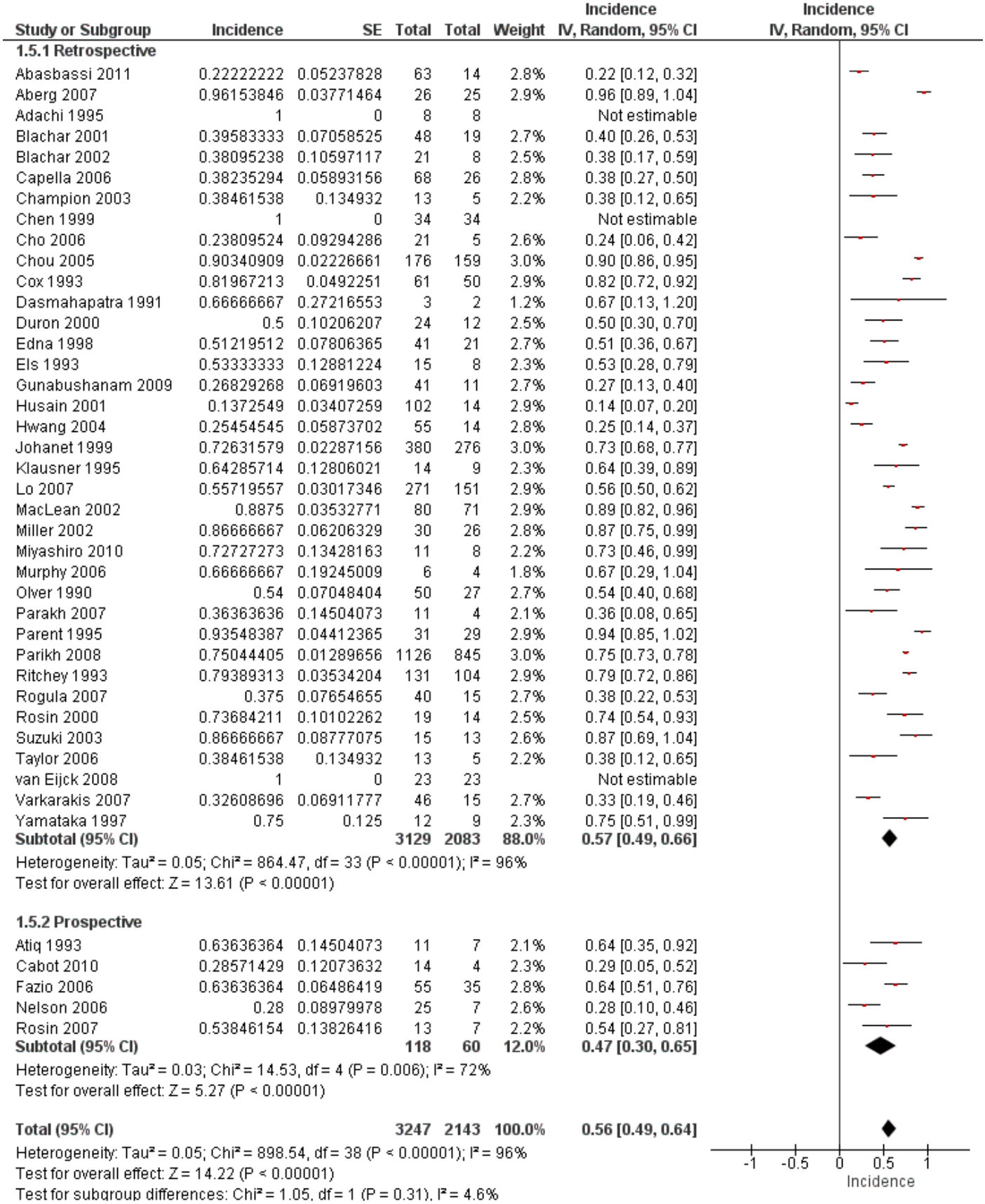
2.5.1. Sensitivity analysis of the cross-sectional incidence of ASBO, stratified by quality of study



2.5.2. Table of Sensitivity analysis of the cross-sectional incidence of ASBO, impact of quality of studies

Study	Point estimate	95% CI
All studies included	0.56	0.49-0.64
Low Quality studies only	0.38	0.25-0.51
Intermediate Quality studies only	0.58	0.48-0.68
High Quality studies only	0.79	0.63-0.95

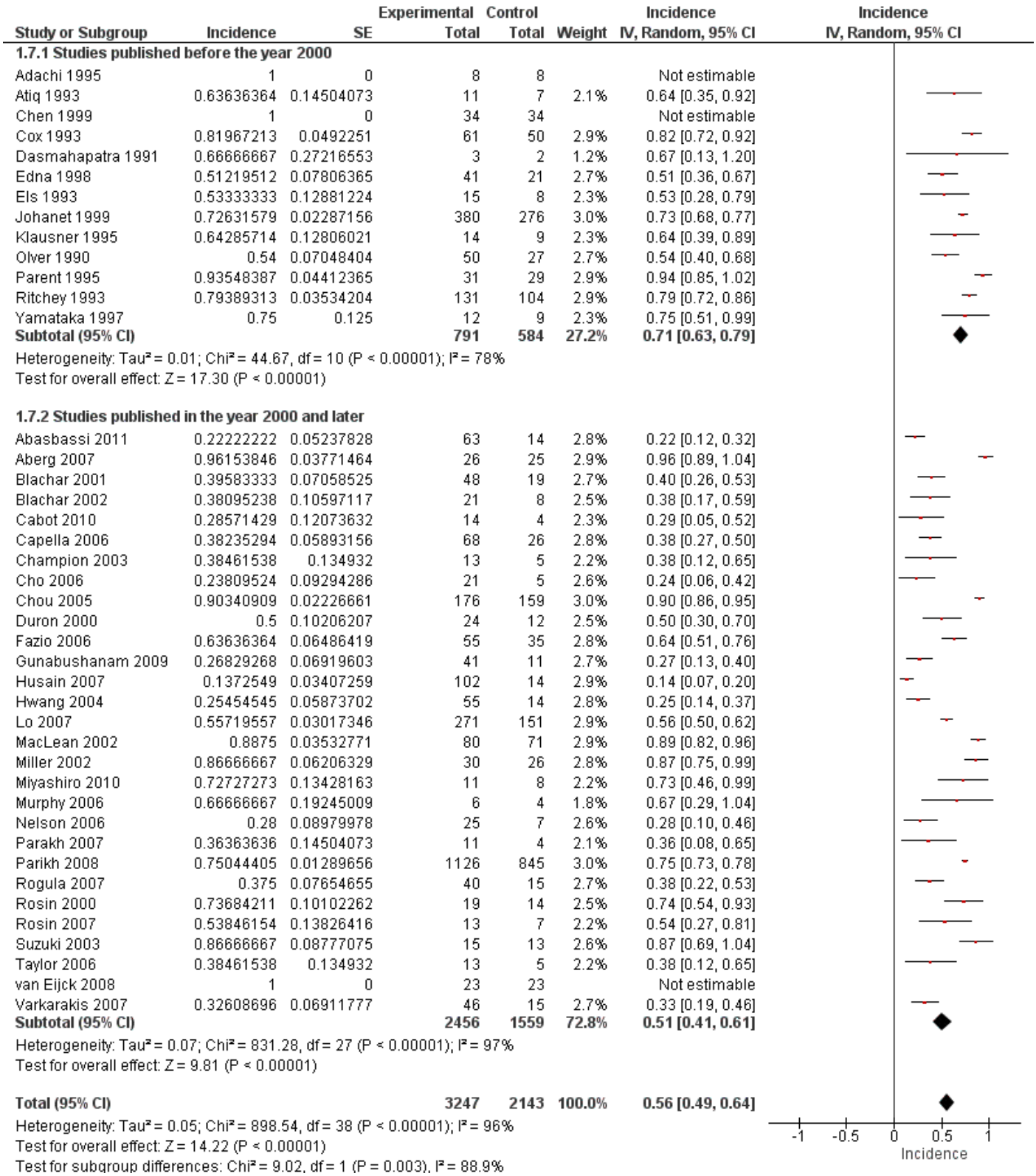
2.6.1. Sensitivity analysis of the cross-sectional incidence of ASBO, stratified by study design



2.6.2. Table of Sensitivity analysis of the cross-sectional incidence of ASBO, impact of study design

Study	Point estimate	95% CI
All studies included	0.56	0.49-0.64
Retrospective studies only	0.57	0.49-0.66
Prospective studies only	0.47	0.30-0.65

2.7.1. Sensitivity analysis of the cross-sectional incidence of ASBO, stratified by publication date



2.7.2. Table of sensitivity analysis of the cross-sectional incidence of ASBO, impact of publication date

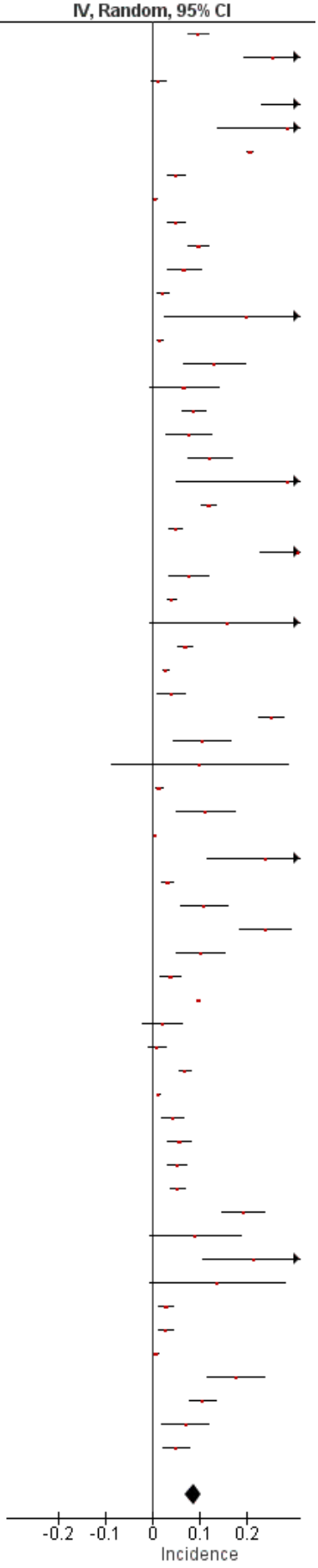
Study	Point estimate	95% CI
All studies included	0.56	0.49-0.64
Studies published before 2000	0.71	0.63-0.79
Studies published from the year 2000 and later	0.51	0.41-0.61

3.1.1 Forest plot of the incidence of PSBO, including all studies

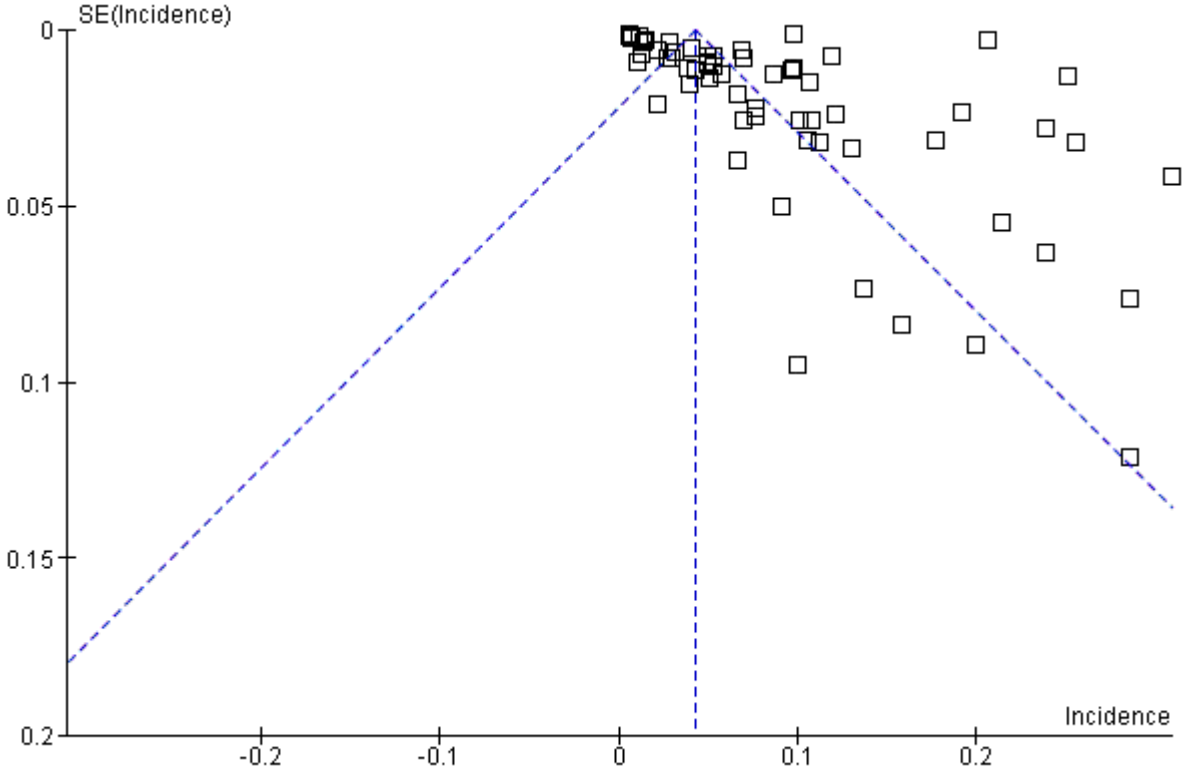
Study or Subgroup	Incidence	SE	Experimental Total	Control Total	Weight	Incidence IV, Random, 95% CI
Abasbassi 2011	0.09662577	0.01157062	652	63	1.9%	0.10 [0.07, 0.12]
Aberg 2007	0.25531915	0.03180152	188	48	1.5%	0.26 [0.19, 0.32]
Abol-Enein 2001	0.01260504	0.00723151	238	3	1.9%	0.01 [-0.00, 0.03]
Adachi 1995	0.43478261	0.10336653	23	10	0.5%	0.43 [0.23, 0.64]
Atiq 1993	0.28571429	0.07636035	35	10	0.7%	0.29 [0.14, 0.44]
Beck 1999	0.20658841	0.00294397	18912	3907	2.0%	0.21 [0.20, 0.21]
Blachar 2002	0.04967603	0.01009761	463	23	1.9%	0.05 [0.03, 0.07]
Bringman 2005	0.00518583	0.00211161	1157	6	2.0%	0.01 [0.00, 0.01]
Cabot 2010	0.0490566	0.00938184	530	26	1.9%	0.05 [0.03, 0.07]
Capella 2006	0.09756098	0.01123908	697	68	1.9%	0.10 [0.08, 0.12]
Catena 2012	0.06629834	0.01849337	181	12	1.8%	0.07 [0.03, 0.10]
Champion 2003	0.02177554	0.00597333	597	13	2.0%	0.02 [0.01, 0.03]
Chang 2012	0.2	0.08944272	20	4	0.6%	0.20 [0.02, 0.38]
Cho 2006	0.015	0.00324863	1400	21	2.0%	0.01 [0.01, 0.02]
Coran 1990	0.13	0.03363034	100	13	1.5%	0.13 [0.06, 0.20]
Dasmahapatra 1991	0.06666667	0.03718489	45	3	1.4%	0.07 [-0.01, 0.14]
Edna 1998	0.08686441	0.01296336	472	41	1.9%	0.09 [0.06, 0.11]
El-Gohary 2010	0.07627119	0.02443495	118	9	1.7%	0.08 [0.03, 0.12]
Els 1993	0.12154696	0.02428802	181	22	1.7%	0.12 [0.07, 0.17]
Fan 2001	0.28571429	0.12073632	14	4	0.4%	0.29 [0.05, 0.52]
Fazio 2006	0.11934156	0.00786045	1701	203	1.9%	0.12 [0.10, 0.13]
Gunabushanam 2009	0.0491018	0.00747778	835	41	1.9%	0.05 [0.03, 0.06]
Hashimoto 2012	0.30894309	0.04166233	123	38	1.3%	0.31 [0.23, 0.39]
Hayashi 2008	0.07638889	0.02213494	144	11	1.7%	0.08 [0.03, 0.12]
Hwang 2004	0.04008746	0.00529594	1372	55	2.0%	0.04 [0.03, 0.05]
Khaitan 2003	0.15789474	0.08365468	19	3	0.6%	0.16 [-0.01, 0.32]
Lee 2012	0.06986028	0.00805296	1002	70	1.9%	0.07 [0.05, 0.09]
Leung 2009	0.02813731	0.00392283	1777	50	2.0%	0.03 [0.02, 0.04]
Lumley 2002	0.03896104	0.01559285	154	6	1.8%	0.04 [0.01, 0.07]
MacLean 2002	0.25138632	0.01318822	1082	272	1.9%	0.25 [0.23, 0.28]
Mais 1998	0.10526316	0.03148648	95	10	1.5%	0.11 [0.04, 0.17]
Mendez-Gallart 2011	0.1	0.09486833	10	1	0.5%	0.10 [-0.09, 0.29]
Miyashiro 2010	0.01298701	0.00389022	847	11	2.0%	0.01 [0.01, 0.02]
Montz 1994	0.1122449	0.03188723	98	11	1.5%	0.11 [0.05, 0.17]
Muffly 2012	0.00511894	0.00123834	3321	17	2.0%	0.01 [0.00, 0.01]
Murphy 2006	0.23913043	0.06289174	46	11	0.9%	0.24 [0.12, 0.36]
Nelson 2006	0.03188776	0.00627504	784	25	2.0%	0.03 [0.02, 0.04]
Ng 2009	0.10810811	0.02552433	148	16	1.7%	0.11 [0.06, 0.16]
Nieuwenhuijzen 1998	0.23931624	0.02789204	234	56	1.6%	0.24 [0.18, 0.29]
Nour 1996	0.10144928	0.02570137	138	14	1.7%	0.10 [0.05, 0.15]
Parakh 2007	0.03793103	0.01121764	290	11	1.9%	0.04 [0.02, 0.06]
Parikh 2008	0.09733322	0.00137019	46798	4555	2.0%	0.10 [0.09, 0.10]
Ragni 1996	0.02173913	0.02150154	46	1	1.7%	0.02 [-0.02, 0.06]
Rempen 1995	0.00961538	0.00956905	104	1	1.9%	0.01 [-0.01, 0.03]
Ritchey 1993	0.06858639	0.00578327	1910	131	2.0%	0.07 [0.06, 0.08]
Rogula 2007	0.01155068	0.00181574	3463	40	2.0%	0.01 [0.01, 0.02]
Rosin 2007	0.04248366	0.01152984	306	13	1.9%	0.04 [0.02, 0.07]
Saklani 2012	0.05740181	0.01278533	331	19	1.9%	0.06 [0.03, 0.08]
Salum 2001	0.05251142	0.01065803	438	23	1.9%	0.05 [0.03, 0.07]
Scholin 2011	0.05216285	0.00793115	786	41	1.9%	0.05 [0.04, 0.07]
Sileri 2008	0.19202899	0.02370974	276	53	1.7%	0.19 [0.15, 0.24]
Sowande 2011	0.09090909	0.05004381	33	3	1.1%	0.09 [-0.01, 0.19]
Talwar 1997	0.21428571	0.05483211	56	12	1.0%	0.21 [0.11, 0.32]
Tashjian 2007	0.13636364	0.073165	22	3	0.8%	0.14 [-0.01, 0.28]
Taylor 2006	0.02927928	0.00800084	444	13	1.9%	0.03 [0.01, 0.04]
Taylor 2010	0.02676399	0.00796093	411	11	1.9%	0.03 [0.01, 0.04]
Tsao 2007	0.00723982	0.00255038	1105	8	2.0%	0.01 [0.00, 0.01]
van Eijck 2008	0.17687075	0.03147048	147	26	1.5%	0.18 [0.12, 0.24]
Varkarakis 2007	0.10599078	0.01477611	434	46	1.9%	0.11 [0.08, 0.13]
Wang 1999	0.07	0.0255147	100	7	1.7%	0.07 [0.02, 0.12]
Yamataka 1997	0.05	0.01406829	240	12	1.9%	0.05 [0.02, 0.08]
Total (95% CI)			**97693**	**10256**	**100.0%**	**0.09 [0.07, 0.10]**

Heterogeneity: Tau² = 0.00; Chi² = 7362.88, df = 60 (P < 0.00001); I² = 99%

Test for overall effect: Z = 10.66 (P < 0.00001)



3.1.2. Funnel plot of studies included in analysis of PSBO



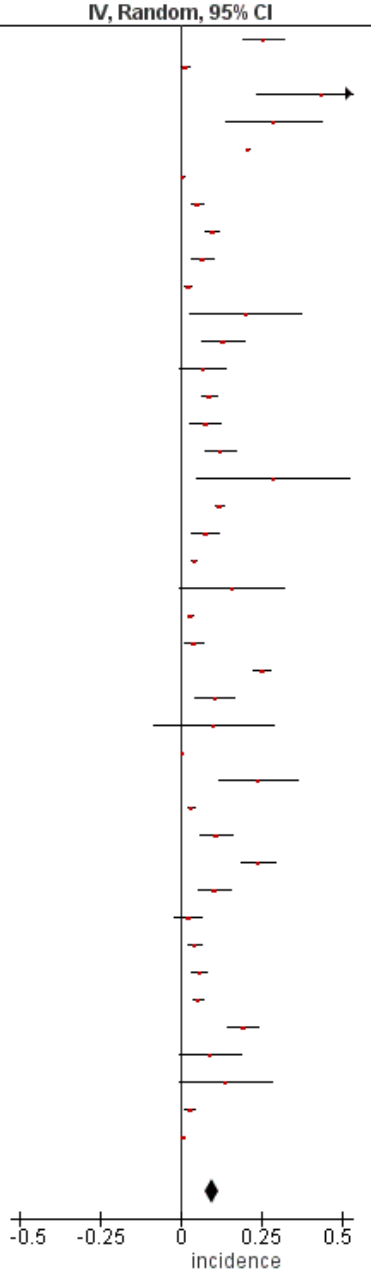
3.2.1. Forest plot of analysis for the incidence of PSBO in studies with adequate description of follow-up for best and worst case scenario analysis.

41 studies included, 27 studies without loss to follow-up (=at least one long term follow-up moment in each patient)

			Experimental	Control		Incidence	Incidence
Study or Subgroup	Incidence	SE	Total	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Aberg 2007	0.25531915	0.03180152	188	48	2.4%	0.26 [0.19, 0.32]	
Abol-Enein 2001	0.01260504	0.00723151	238	3	2.9%	0.01 [-0.00, 0.03]	
Adachi 1995	0.43478261	0.10336653	23	10	0.9%	0.43 [0.23, 0.64]	
Atiq 1993	0.28571429	0.07636035	35	10	1.3%	0.29 [0.14, 0.44]	
Beck 1999	0.20658841	0.00294397	18912	3907	3.0%	0.21 [0.20, 0.21]	
Bringman 2005	0.00518583	0.00211161	1157	6	3.0%	0.01 [0.00, 0.01]	
Cabot 2010	0.0490566	0.00938184	530	26	2.9%	0.05 [0.03, 0.07]	
Capella 2006	0.09756098	0.01123908	697	68	2.9%	0.10 [0.08, 0.12]	
Catena 2012	0.06629834	0.01849337	181	12	2.8%	0.07 [0.03, 0.10]	
Champion 2003	0.02177554	0.00597333	597	13	2.9%	0.02 [0.01, 0.03]	
Chang 2012	0.2	0.08944272	20	4	1.1%	0.20 [0.02, 0.38]	
Coran 1990	0.13	0.03363034	100	13	2.4%	0.13 [0.06, 0.20]	
Dasmahapatra 1991	0.06666667	0.03718489	45	3	2.3%	0.07 [-0.01, 0.14]	
Edna 1998	0.08686441	0.01296336	472	41	2.9%	0.09 [0.06, 0.11]	
El-Gohary 2010	0.07627119	0.02443495	118	9	2.6%	0.08 [0.03, 0.12]	
Els 1993	0.12154696	0.02428802	181	22	2.6%	0.12 [0.07, 0.17]	
Fan 2001	0.28571429	0.12073632	14	4	0.7%	0.29 [0.05, 0.52]	
Fazio 2006	0.11934156	0.00786045	1701	203	2.9%	0.12 [0.10, 0.13]	
Hayashi 2008	0.07638889	0.02213494	144	11	2.7%	0.08 [0.03, 0.12]	
Hwang 2004	0.04008746	0.00529594	1372	55	3.0%	0.04 [0.03, 0.05]	
Khaitan 2003	0.15789474	0.08365468	19	3	1.2%	0.16 [-0.01, 0.32]	
Leung 2009	0.02813731	0.00392283	1777	50	3.0%	0.03 [0.02, 0.04]	
Lumley 2002	0.03896104	0.01559285	154	6	2.8%	0.04 [0.01, 0.07]	
MacLean 2002	0.25138632	0.01318822	1082	272	2.9%	0.25 [0.23, 0.28]	
Mais 1998	0.10526316	0.03148648	95	10	2.4%	0.11 [0.04, 0.17]	
Mendez-Gallart 2011	0.1	0.09486833	10	1	1.0%	0.10 [-0.09, 0.29]	
Muffly 2012	0.00511894	0.00123834	3321	17	3.0%	0.01 [0.00, 0.01]	
Murphy 2006	0.23913043	0.06289174	46	11	1.6%	0.24 [0.12, 0.36]	
Nelson 2006	0.03188776	0.00627504	784	25	2.9%	0.03 [0.02, 0.04]	
Ng 2009	0.10810811	0.02552433	148	16	2.6%	0.11 [0.06, 0.16]	
Nieuwenhuijzen 1998	0.23931624	0.02789204	234	56	2.5%	0.24 [0.18, 0.29]	
Nour 1996	0.10144928	0.02570137	138	14	2.6%	0.10 [0.05, 0.15]	
Ragni 1996	0.02173913	0.02150154	46	1	2.7%	0.02 [-0.02, 0.06]	
Rosin 2007	0.04248366	0.01152984	306	13	2.9%	0.04 [0.02, 0.07]	
Saklani 2012	0.05740181	0.01278533	331	19	2.9%	0.06 [0.03, 0.08]	
Scholin 2011	0.05216285	0.00793115	786	41	2.9%	0.05 [0.04, 0.07]	
Sileri 2008	0.19202899	0.02370974	276	53	2.6%	0.19 [0.15, 0.24]	
Tashjian 2007	0.09090909	0.05004381	33	3	1.9%	0.09 [-0.01, 0.19]	
Taylor 2010	0.13636364	0.073165	22	3	1.4%	0.14 [-0.01, 0.28]	
Varkarakis 2007	0.02676399	0.00796093	411	11	2.9%	0.03 [0.01, 0.04]	
Wang 1999	0.00723982	0.00255038	1105	8	3.0%	0.01 [0.00, 0.01]	
Total (95% CI)			**37849**	**5101**	**100.0%**	**0.10 [0.07, 0.12]**	

Heterogeneity: Tau² = 0.00; Chi² = 4978.98, df = 40 (P < 0.00001); I² = 99%

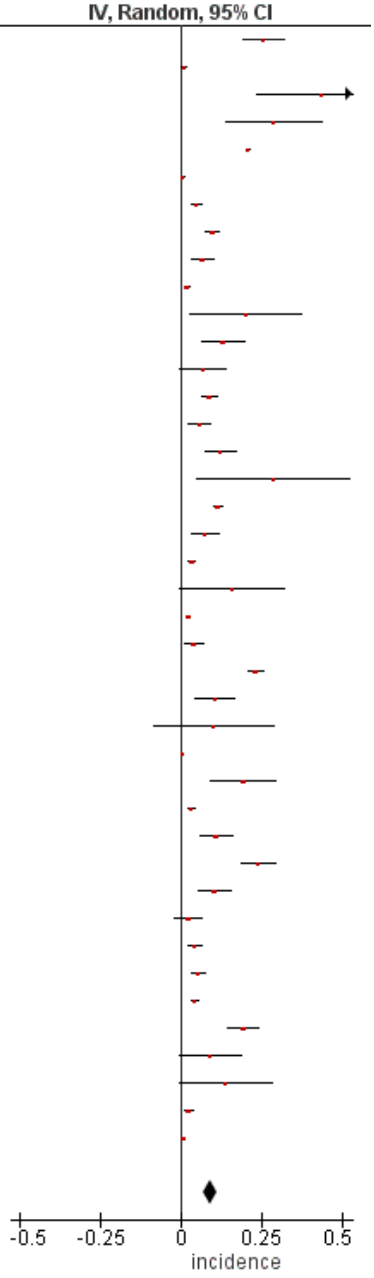
Test for overall effect: Z = 8.23 (P < 0.00001)



3.2.2. Forest plot of best case analysis for the incidence of PSBO

Study or Subgroup	Incidence	SE	Experimental Total	Control Total	Weight	Incidence IV, Random, 95% CI
Aberg 2007	0.25531915	0.03180152	188	48	2.4%	0.26 [0.19, 0.32]
Abol-Enein 2001	0.00872093	0.00501303	344	3	3.0%	0.01 [-0.00, 0.02]
Adachi 1995	0.43478261	0.10336653	23	10	0.8%	0.43 [0.23, 0.64]
Atiq 1993	0.28571429	0.07636035	35	10	1.2%	0.29 [0.14, 0.44]
Beck 1999	0.20658841	0.00294397	18912	3907	3.0%	0.21 [0.20, 0.21]
Bringman 2005	0.00518583	0.00211161	1157	6	3.0%	0.01 [0.00, 0.01]
Cabot 2010	0.04727273	0.00904916	550	26	2.9%	0.05 [0.03, 0.07]
Capella 2006	0.09756098	0.01123908	697	68	2.9%	0.10 [0.08, 0.12]
Catena 2012	0.06629834	0.01849337	181	12	2.8%	0.07 [0.03, 0.10]
Champion 2003	0.01828411	0.00502452	711	13	3.0%	0.02 [0.01, 0.03]
Chang 2012	0.2	0.08944272	20	4	1.0%	0.20 [0.02, 0.38]
Coran 1990	0.13	0.03363034	100	13	2.3%	0.13 [0.06, 0.20]
Dasmahapatra 1991	0.06666667	0.03718489	45	3	2.2%	0.07 [-0.01, 0.14]
Edna 1998	0.08686441	0.01296336	472	41	2.9%	0.09 [0.06, 0.11]
El-Gohary 2010	0.05590062	0.01810524	161	9	2.8%	0.06 [0.02, 0.09]
Els 1993	0.12154696	0.02428802	181	22	2.6%	0.12 [0.07, 0.17]
Fan 2001	0.28571429	0.12073632	14	4	0.7%	0.29 [0.05, 0.52]
Fazio 2006	0.1133445	0.00749083	1791	203	3.0%	0.11 [0.10, 0.13]
Hayashi 2008	0.07333333	0.02128467	150	11	2.7%	0.07 [0.03, 0.12]
Hwang 2004	0.03206997	0.00425441	1715	55	3.0%	0.03 [0.02, 0.04]
Khaitan 2003	0.15789474	0.08365468	19	3	1.1%	0.16 [-0.01, 0.32]
Leung 2009	0.02144082	0.00299951	2332	50	3.0%	0.02 [0.02, 0.03]
Lumley 2002	0.03870968	0.01549427	155	6	2.8%	0.04 [0.01, 0.07]
MacLean 2002	0.23089983	0.01227808	1178	272	2.9%	0.23 [0.21, 0.25]
Mais 1998	0.10526316	0.03148648	95	10	2.4%	0.11 [0.04, 0.17]
Mendez-Gallart 2011	0.1	0.09486833	10	1	0.9%	0.10 [-0.09, 0.29]
Muffly 2012	0.00511124	0.00123649	3326	17	3.0%	0.01 [0.00, 0.01]
Murphy 2006	0.19298246	0.05227126	57	11	1.8%	0.19 [0.09, 0.30]
Nelson 2006	0.03188776	0.00627504	784	25	3.0%	0.03 [0.02, 0.04]
Ng 2009	0.10810811	0.02552433	148	16	2.6%	0.11 [0.06, 0.16]
Nieuwenhuijzen 1998	0.23931624	0.02789204	234	56	2.5%	0.24 [0.18, 0.29]
Nour 1996	0.10144928	0.02570137	138	14	2.6%	0.10 [0.05, 0.15]
Ragni 1996	0.02173913	0.02150154	46	1	2.7%	0.02 [-0.02, 0.06]
Rosin 2007	0.04248366	0.01152984	306	13	2.9%	0.04 [0.02, 0.07]
Saklani 2012	0.05292479	0.01181611	359	19	2.9%	0.05 [0.03, 0.08]
Scholin 2011	0.04248705	0.00649287	965	41	3.0%	0.04 [0.03, 0.06]
Sileri 2008	0.19202899	0.02370974	276	53	2.6%	0.19 [0.15, 0.24]
Tashjian 2007	0.09090909	0.05004381	33	3	1.9%	0.09 [-0.01, 0.19]
Taylor 2010	0.13636364	0.073165	22	3	1.3%	0.14 [-0.01, 0.28]
Varkarakis 2007	0.02315789	0.00690105	475	11	3.0%	0.02 [0.01, 0.04]
Wang 1999	0.00723982	0.00255038	1105	8	3.0%	0.01 [0.00, 0.01]
Total (95% CI)			**39510**	**5101**	**100.0%**	**0.09 [0.07, 0.11]**

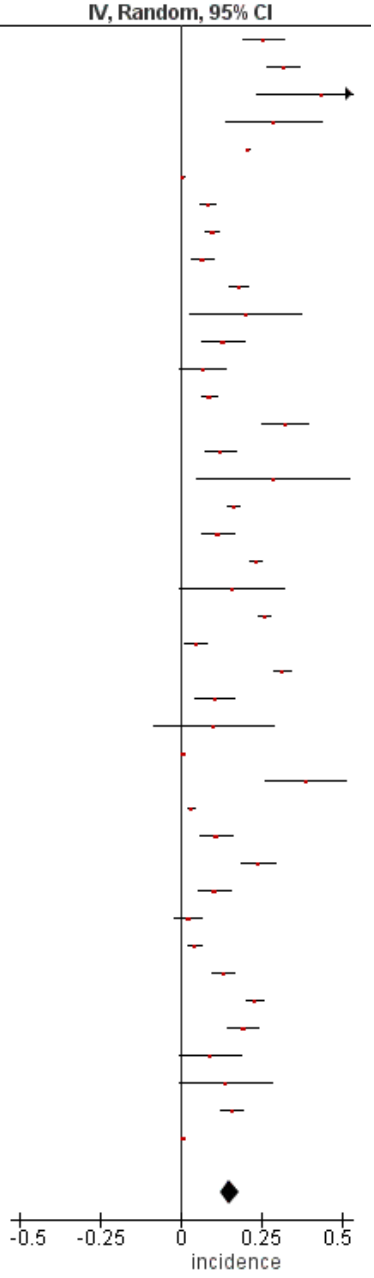
Heterogeneity: Tau² = 0.00; Chi² = 4973.89, df = 40 (P < 0.00001); I² = 99%
Test for overall effect: Z = 8.33 (P < 0.00001)



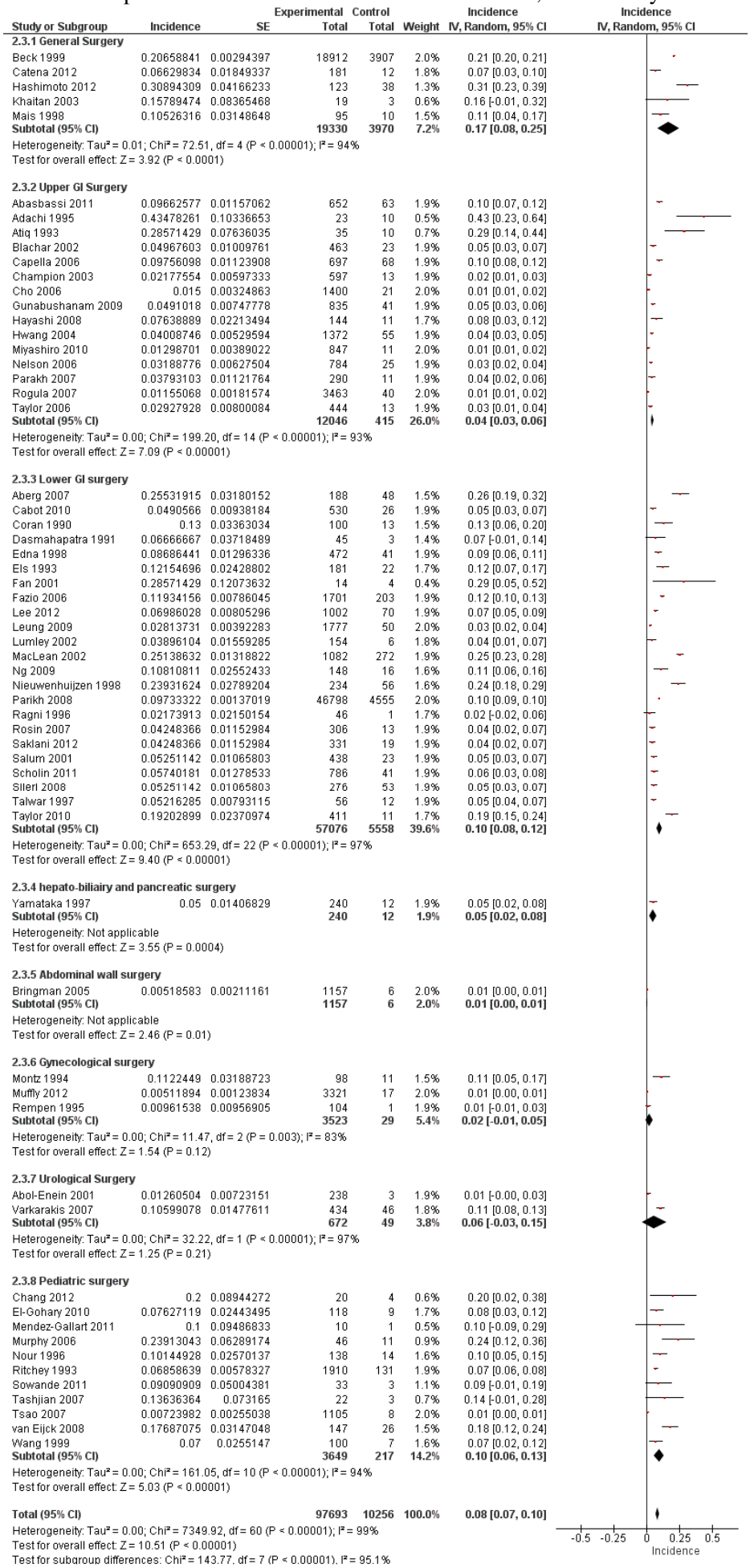
3.2.3. Forest plot of worst case analysis for the incidence of PSBO

Study or Subgroup	Incidence	SE	Experimental Total	Control Total	Weight	Incidence IV, Random, 95% CI
Aberg 2007	0.25531915	0.03180152	188	48	2.5%	0.26 [0.19, 0.32]
Abol-Enein 2001	0.31686047	0.02508473	344	109	2.6%	0.32 [0.27, 0.37]
Adachi 1995	0.43478261	0.10336653	23	10	1.2%	0.43 [0.23, 0.64]
Atiq 1993	0.28571429	0.07636035	35	10	1.6%	0.29 [0.14, 0.44]
Beck 1999	0.20658841	0.00294397	18912	3907	2.8%	0.21 [0.20, 0.21]
Bringman 2005	0.00518583	0.00211161	1157	6	2.8%	0.01 [0.00, 0.01]
Cabot 2010	0.08363636	0.01180457	550	46	2.8%	0.08 [0.06, 0.11]
Capella 2006	0.09756098	0.01123908	697	68	2.8%	0.10 [0.08, 0.12]
Catena 2012	0.06629834	0.01849337	181	12	2.7%	0.07 [0.03, 0.10]
Champion 2003	0.17862166	0.01436494	711	127	2.8%	0.18 [0.15, 0.21]
Chang 2012	0.2	0.08944272	20	4	1.4%	0.20 [0.02, 0.38]
Coran 1990	0.13	0.03363034	100	13	2.5%	0.13 [0.06, 0.20]
Dasmahapatra 1991	0.06666667	0.03718489	45	3	2.4%	0.07 [-0.01, 0.14]
Edna 1998	0.08686441	0.01296336	472	41	2.8%	0.09 [0.06, 0.11]
El-Gohary 2010	0.32298137	0.03685328	161	52	2.4%	0.32 [0.25, 0.40]
Els 1993	0.12154696	0.02428802	181	22	2.6%	0.12 [0.07, 0.17]
Fan 2001	0.28571429	0.12073632	14	4	1.0%	0.29 [0.05, 0.52]
Fazio 2006	0.16359576	0.0087407	1791	293	2.8%	0.16 [0.15, 0.18]
Hayashi 2008	0.11333333	0.02588293	150	17	2.6%	0.11 [0.06, 0.16]
Hwang 2004	0.23206997	0.01019385	1715	398	2.8%	0.23 [0.21, 0.25]
Khaitan 2003	0.15789474	0.08365468	19	3	1.5%	0.16 [-0.01, 0.32]
Leung 2009	0.25943396	0.00907676	2332	605	2.8%	0.26 [0.24, 0.28]
Lumley 2002	0.04516129	0.01667947	155	7	2.7%	0.05 [0.01, 0.08]
MacLean 2002	0.31239389	0.01350357	1178	368	2.8%	0.31 [0.29, 0.34]
Mais 1998	0.10526316	0.03148648	95	10	2.5%	0.11 [0.04, 0.17]
Mendez-Gallart 2011	0.1	0.09486833	10	1	1.3%	0.10 [-0.09, 0.29]
Muffly 2012	0.00661455	0.00140556	3326	22	2.8%	0.01 [0.00, 0.01]
Murphy 2006	0.38596491	0.0644812	57	22	1.9%	0.39 [0.26, 0.51]
Nelson 2006	0.03188776	0.00627504	784	25	2.8%	0.03 [0.02, 0.04]
Ng 2009	0.10810811	0.02552433	148	16	2.6%	0.11 [0.06, 0.16]
Nieuwenhuijzen 1998	0.23931624	0.02789204	234	56	2.6%	0.24 [0.18, 0.29]
Nour 1996	0.10144928	0.02570137	138	14	2.6%	0.10 [0.05, 0.15]
Ragni 1996	0.02173913	0.02150154	46	1	2.7%	0.02 [-0.02, 0.06]
Rosin 2007	0.04248366	0.01152984	306	13	2.8%	0.04 [0.02, 0.07]
Saklani 2012	0.13091922	0.01780265	359	47	2.7%	0.13 [0.10, 0.17]
Scholin 2011	0.22797927	0.01350512	965	220	2.8%	0.23 [0.20, 0.25]
Sileri 2008	0.19202899	0.02370974	276	53	2.6%	0.19 [0.15, 0.24]
Tashjian 2007	0.09090909	0.05004381	33	3	2.2%	0.09 [-0.01, 0.19]
Taylor 2010	0.13636364	0.073165	22	3	1.7%	0.14 [-0.01, 0.28]
Varkarakis 2007	0.15789474	0.01673094	475	75	2.7%	0.16 [0.13, 0.19]
Wang 1999	0.00723982	0.00255038	1105	8	2.8%	0.01 [0.00, 0.01]
Total (95% CI)			**39510**	**6762**	**100.0%**	**0.15 [0.12, 0.18]**

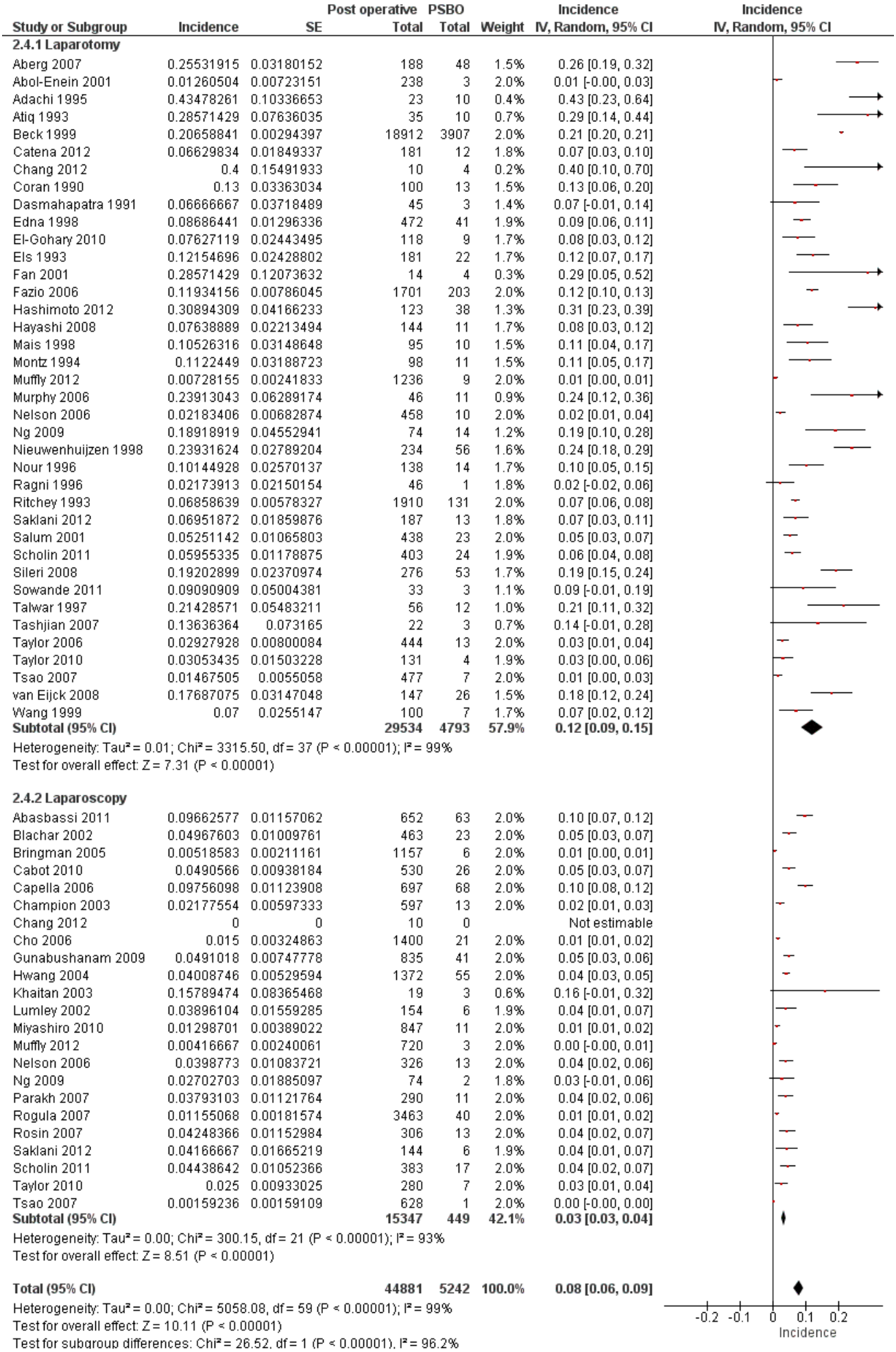
Heterogeneity: Tau² = 0.01; Chi² = 6592.23, df = 40 (P < 0.00001); I² = 99%
Test for overall effect: Z = 9.99 (P < 0.00001)



3.3.1. Forest plot of the cummulative incidence of PSBO, stratified by anatomical location



3.4.1. Forest plot of the cummulative incidence of PSBO, stratified by surgical technique
8 studies excluded. Surgical technique not specified in 8 studies.

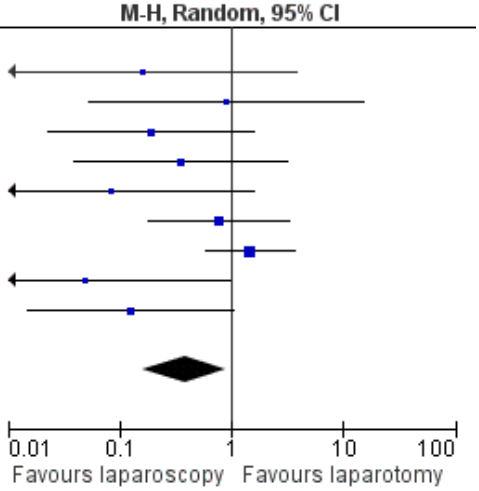


3.4.2. Forest plots of the incidence of PSBO compared between laparoscopy and laparotomy

Study or Subgroup	Laparoscopy Events	Laparoscopy Total	Laparotomy Events	Laparotomy Total	Weight	Odds Ratio M-H, Random, 95% CI
Bartels 2012	199	5	208	14		Not estimable
Chang 2012	0	10	2	10	6.0%	0.16 [0.01, 3.85]
Eshuis 2010	1	29	1	26	7.2%	0.89 [0.05, 15.04]
Majewski 2005	1	64	7	91	10.9%	0.19 [0.02, 1.59]
Nelson 2006	1	326	4	458	10.4%	0.35 [0.04, 3.14]
Ng 2009	0	74	5	74	6.9%	0.08 [0.00, 1.56]
Saklani 2012	3	144	5	187	17.0%	0.77 [0.18, 3.30]
Scholin 2011	11	383	8	403	23.9%	1.46 [0.58, 3.67]
Stanton 2010	0	170	3	62	6.6%	0.05 [0.00, 0.98]
Tsao 2007	1	628	6	477	10.9%	0.13 [0.02, 1.04]
Total (95% CI)		**1833**		**1802**	**100.0%**	**0.38 [0.16, 0.91]**
Total events	217		249			

Heterogeneity: $Tau^2 = 0.58$; $Chi^2 = 12.69$, df = 8 (P = 0.12); $I^2 = 37\%$

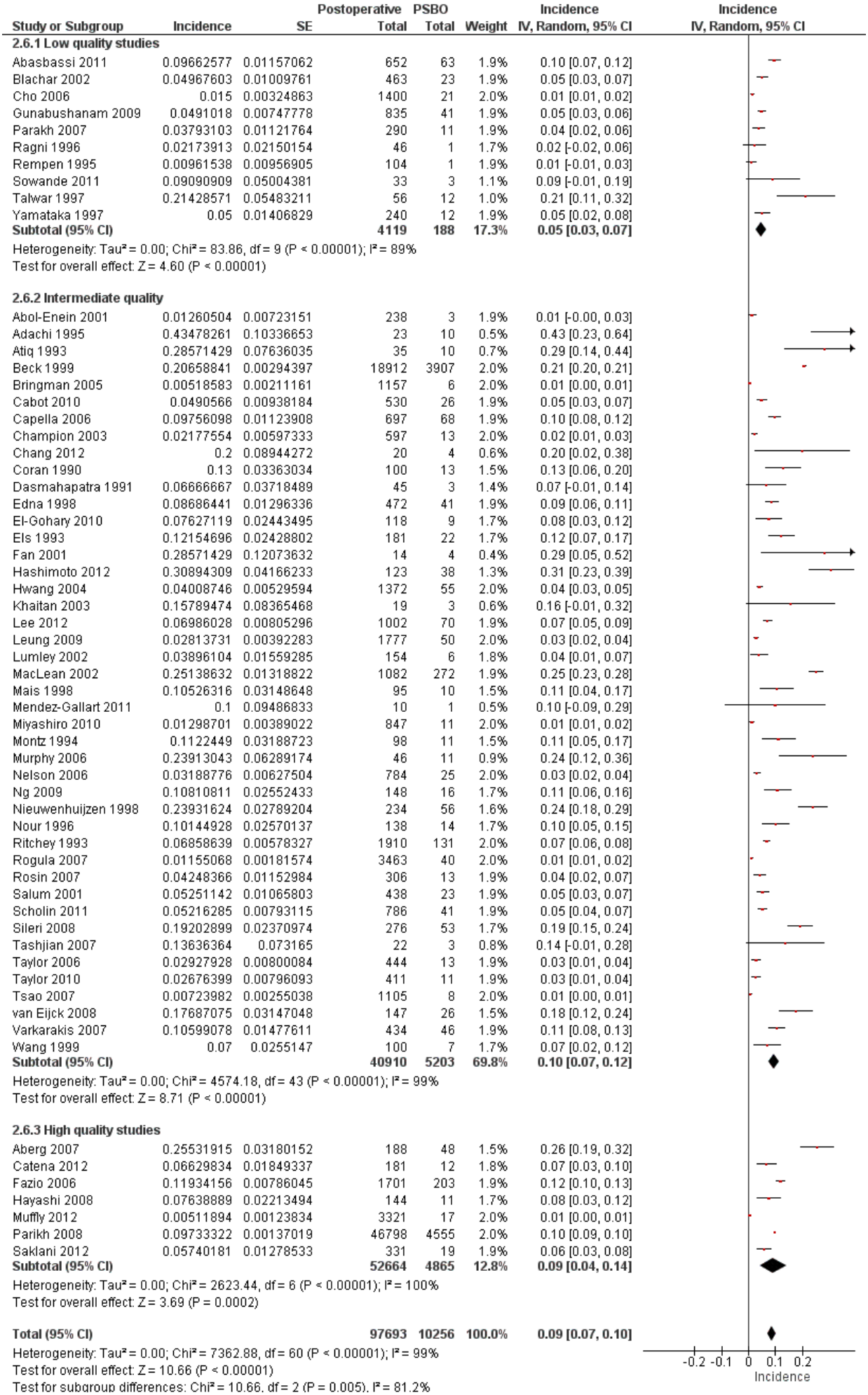
Test for overall effect: Z = 2.19 (P = 0.03)



3.5.1. Sensitivity analysis of the incidence of PSBO, impact of individual studies

Study	Point estimate	95%CI
All available studies	0.09	0.07-0.10
Abasbassi 2011	0.09	0.07-0.10
Aberg 2007	0.09	0.07-0.10
Abol-Enein 2001	0.09	0.07-0.10
Adachi 1995	0.09	0.07-0.10
Atiq 1993	0.09	0.07-0.10
Beck 1999	0.09	0.07-0.10
Blachar 2002	0.09	0.07-0.10
Bringman 2005	0.09	0.07-0.10
Cabot 2010	0.09	0.07-0.10
Capella 2006	0.09	0.07-0.10
Catena 2012	0.09	0.07-0.10
Champion 2003	0.09	0.07-0.10
Chang 2012	0.09	0.07-0.10
Cho 2006	0.09	0.07-0.10
Coran 1990	0.09	0.07-0.10
Dasmahapatra 1991	0.09	0.07-0.10
Edna 1998	0.09	0.07-0.10
El-Gohary 2010	0.09	0.07-0.10
Els 1993	0.09	0.07-0.10
Fan 2001	0.09	0.07-0.10
Fazio 2006	0.09	0.07-0.10
Gunabushanam 2009	0.09	0.07-0.10
Hashimoto 2012	0.09	0.07-0.10
Hayashi 2008	0.09	0.07-0.10
Hwang 2004	0.09	0.07-0.10
Khaitan 2003	0.09	0.07-0.10
Lee 2012	0.09	0.07-0.10
Leung 2009	0.09	0.07-0.10
Lumley 2002	0.09	0.07-0.10
MacLean 2002	0.09	0.07-0.10
Mais 1998	0.09	0.07-0.10
Mendez-Gallart 2011	0.09	0.07-0.10
Miyashiro 2010	0.09	0.07-0.10
Montz 1994	0.09	0.07-0.10
Muffly 2012	0.09	0.07-0.11
Murphy 2006	0.09	0.07-0.10
Nelson 2006	0.09	0.07-0.10
Ng 2009	0.09	0.07-0.10
Nieuwenhuijzen 1998	0.09	0.07-0.10
Nour 1996	0.09	0.07-0.10
Parakh 2007	0.09	0.07-0.10
Parikh 2008	0.09	0.07-0.10
Ragni 1996	0.09	0.07-0.10
Rempen 1995	0.09	0.07-0.10
Ritchey 1993	0.09	0.07-0.10
Rogula 2007	0.09	0.07-0.11
Rosin 2007	0.09	0.07-0.10
Saklani 2012	0.09	0.07-0.10
Salum 2001	0.09	0.07-0.10
Scholin 2011	0.09	0.07-0.10
Sileri 2008	0.09	0.07-0.10
Sowande 2011	0.09	0.07-0.10
Talwar 1997	0.09	0.07-0.10
Tashjian 2007	0.09	0.07-0.10
Taylor 2006	0.09	0.07-0.10
Taylor 2010	0.09	0.07-0.10
Tsao 2007	0.09	0.07-0.10
van Eijck 2008	0.09	0.07-0.10
Varkarakis 2007	0.09	0.07-0.10
Wang 1999	0.09	0.07-0.10
Yamataka 1997	0.09	0.07-0.10

3.6.1. Sensitivity analysis of the incidence of PSBO, stratified by quality of study

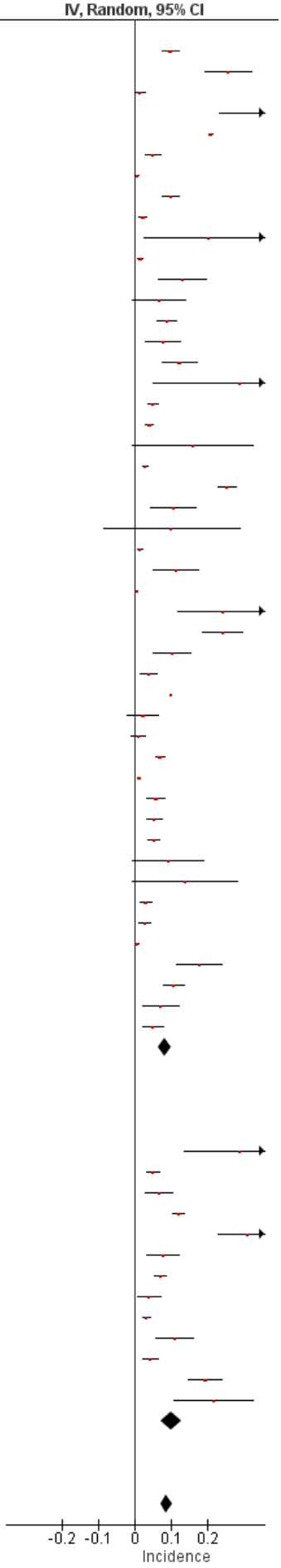


3.6.2 Table of Sensitivity analysis of the incidence of PSBO, impact of quality of studies

Study	Point estimate	95%CI
All available studies	0.09	0.07-0.10
Low Quality studies only	0.05	0.03-0.07
Intermediate Quality studies only	0.10	0.07-0.12
High studies only	0.09	0.04-0.14

3.7.1. Sensitivity analysis of the incidence of PSBO, stratified by study design

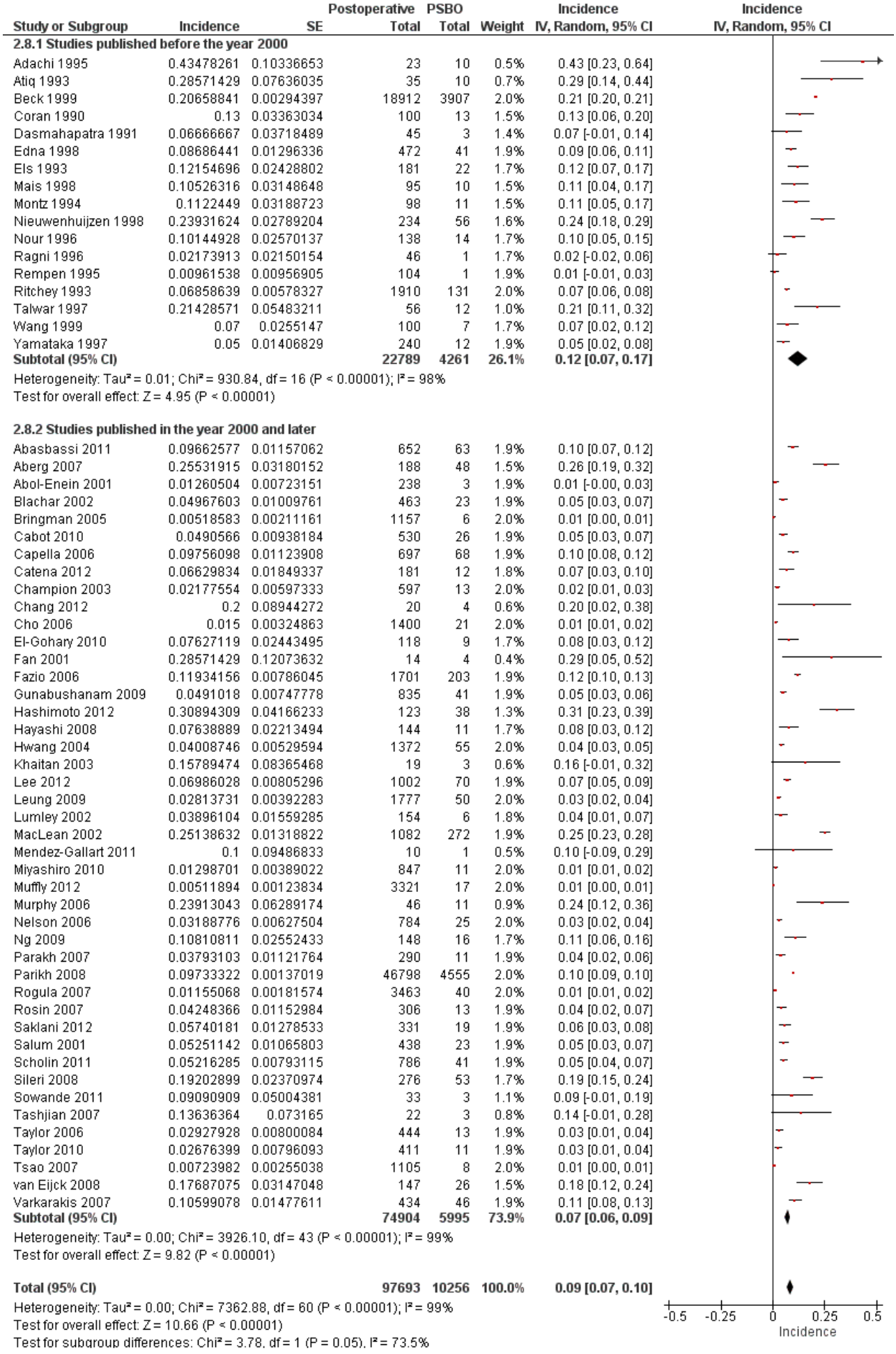
Study or Subgroup	Incidence	SE	Postoperative PSBO Total	PSBO Total	Weight	Incidence IV, Random, 95% CI
2.7.1 Retrospective studies						
Abasbassi 2011	0.09662577	0.01157062	652	63	1.9%	0.10 [0.07, 0.12]
Aberg 2007	0.25531915	0.03180152	188	48	1.5%	0.26 [0.19, 0.32]
Abol-Enein 2001	0.01260504	0.00723151	238	3	1.9%	0.01 [-0.00, 0.03]
Adachi 1995	0.43478261	0.10336653	23	10	0.5%	0.43 [0.23, 0.64]
Beck 1999	0.20658841	0.00294397	18912	3907	2.0%	0.21 [0.20, 0.21]
Blachar 2002	0.04967603	0.01009761	463	23	1.9%	0.05 [0.03, 0.07]
Bringman 2005	0.00518583	0.00211161	1157	6	2.0%	0.01 [0.00, 0.01]
Capella 2006	0.09756098	0.01123908	697	68	1.9%	0.10 [0.08, 0.12]
Champion 2003	0.02177554	0.00597333	597	13	2.0%	0.02 [0.01, 0.03]
Chang 2012	0.2	0.08944272	20	4	0.6%	0.20 [0.02, 0.38]
Cho 2006	0.015	0.00324863	1400	21	2.0%	0.01 [0.01, 0.02]
Coran 1990	0.13	0.03363034	100	13	1.5%	0.13 [0.06, 0.20]
Dasmahapatra 1991	0.06666667	0.03718489	45	3	1.4%	0.07 [-0.01, 0.14]
Edna 1998	0.08686441	0.01296336	472	41	1.9%	0.09 [0.06, 0.11]
El-Gohary 2010	0.07627119	0.02443495	118	9	1.7%	0.08 [0.03, 0.12]
Els 1993	0.12154696	0.02428802	181	22	1.7%	0.12 [0.07, 0.17]
Fan 2001	0.28571429	0.12073632	14	4	0.4%	0.29 [0.05, 0.52]
Gunabushanam 2009	0.0491018	0.00747778	835	41	1.9%	0.05 [0.03, 0.06]
Hwang 2004	0.04008746	0.00529594	1372	55	2.0%	0.04 [0.03, 0.05]
Khaitan 2003	0.15789474	0.08365468	19	3	0.6%	0.16 [-0.01, 0.32]
Leung 2009	0.02813731	0.00392283	1777	50	2.0%	0.03 [0.02, 0.04]
MacLean 2002	0.25138632	0.01318822	1082	272	1.9%	0.25 [0.23, 0.28]
Mais 1998	0.10526316	0.03148648	95	10	1.5%	0.11 [0.04, 0.17]
Mendez-Gallart 2011	0.1	0.09486833	10	1	0.5%	0.10 [-0.09, 0.29]
Miyashiro 2010	0.01298701	0.00389022	847	11	2.0%	0.01 [0.01, 0.02]
Montz 1994	0.1122449	0.03188723	98	11	1.5%	0.11 [0.05, 0.17]
Muffly 2012	0.00511894	0.00123834	3321	17	2.0%	0.01 [0.00, 0.01]
Murphy 2006	0.23913043	0.06289174	46	11	0.9%	0.24 [0.12, 0.36]
Nieuwenhuijzen 1998	0.23931624	0.02789204	234	56	1.6%	0.24 [0.18, 0.29]
Nour 1996	0.10144928	0.02570137	138	14	1.7%	0.10 [0.05, 0.15]
Parakh 2007	0.03793103	0.01121764	290	11	1.9%	0.04 [0.02, 0.06]
Parikh 2008	0.09733322	0.00137019	46798	4555	2.0%	0.10 [0.09, 0.10]
Ragni 1996	0.02173913	0.02150154	46	1	1.7%	0.02 [-0.02, 0.06]
Rempen 1995	0.00961538	0.00956905	104	1	1.9%	0.01 [-0.01, 0.03]
Ritchey 1993	0.06858639	0.00578327	1910	131	2.0%	0.07 [0.06, 0.08]
Rogula 2007	0.01155068	0.00181574	3463	40	2.0%	0.01 [0.01, 0.02]
Saklani 2012	0.05740181	0.01278533	331	19	1.9%	0.06 [0.03, 0.08]
Salum 2001	0.05251142	0.01065803	438	23	1.9%	0.05 [0.03, 0.07]
Scholin 2011	0.05216285	0.00793115	786	41	1.9%	0.05 [0.04, 0.07]
Sowande 2011	0.09090909	0.05004381	33	3	1.1%	0.09 [-0.01, 0.19]
Tashjian 2007	0.13636364	0.073165	22	3	0.8%	0.14 [-0.01, 0.28]
Taylor 2006	0.02927928	0.00800084	444	13	1.9%	0.03 [0.01, 0.04]
Taylor 2010	0.02676399	0.00796093	411	11	1.9%	0.03 [0.01, 0.04]
Tsao 2007	0.00723982	0.00255038	1105	8	2.0%	0.01 [0.00, 0.01]
van Eijck 2008	0.17687075	0.03147048	147	26	1.5%	0.18 [0.12, 0.24]
Varkarakis 2007	0.10599078	0.01477611	434	46	1.9%	0.11 [0.08, 0.13]
Wang 1999	0.07	0.0255147	100	7	1.7%	0.07 [0.02, 0.12]
Yamataka 1997	0.05	0.01406829	240	12	1.9%	0.05 [0.02, 0.08]
Subtotal (95% CI)			**92253**	**9761**	**78.6%**	**0.08 [0.06, 0.10]**
Heterogeneity: Tau² = 0.00; Chi² = 7139.95, df = 47 (P < 0.00001); I² = 99%						
Test for overall effect: Z = 8.82 (P < 0.00001)						
2.7.2 Prospective						
Atiq 1993	0.28571429	0.07636035	35	10	0.7%	0.29 [0.14, 0.44]
Cabot 2010	0.0490566	0.00938184	530	26	1.9%	0.05 [0.03, 0.07]
Catena 2012	0.06629834	0.01849337	181	12	1.8%	0.07 [0.03, 0.10]
Fazio 2006	0.11934156	0.00786045	1701	203	1.9%	0.12 [0.10, 0.13]
Hashimoto 2012	0.30894309	0.04166233	123	38	1.3%	0.31 [0.23, 0.39]
Hayashi 2008	0.07638889	0.02213494	144	11	1.7%	0.08 [0.03, 0.12]
Lee 2012	0.06986028	0.00805296	1002	70	1.9%	0.07 [0.05, 0.09]
Lumley 2002	0.03896104	0.01559285	154	6	1.8%	0.04 [0.01, 0.07]
Nelson 2006	0.03188776	0.00627504	784	25	2.0%	0.03 [0.02, 0.04]
Ng 2009	0.10810811	0.02552433	148	16	1.7%	0.11 [0.06, 0.16]
Rosin 2007	0.04248366	0.01152984	306	13	1.9%	0.04 [0.02, 0.07]
Sileri 2008	0.19202899	0.02370974	276	53	1.7%	0.19 [0.15, 0.24]
Talwar 1997	0.21428571	0.05483211	56	12	1.0%	0.21 [0.11, 0.32]
Subtotal (95% CI)			**5440**	**495**	**21.4%**	**0.10 [0.07, 0.13]**
Heterogeneity: Tau² = 0.00; Chi² = 166.91, df = 12 (P < 0.00001); I² = 93%						
Test for overall effect: Z = 7.01 (P < 0.00001)						
Total (95% CI)			**97693**	**10256**	**100.0%**	**0.09 [0.07, 0.10]**
Heterogeneity: Tau² = 0.00; Chi² = 7362.88, df = 60 (P < 0.00001); I² = 99%						
Test for overall effect: Z = 10.66 (P < 0.00001)						
Test for subgroup differences: Chi² = 1.32, df = 1 (P = 0.25), I² = 24.4%						



3.7.2. Table of sensitivity analysis of the incidence of PSBO, impact of study design

Study	Point estimate	95% CI
All studies included	0.09	0.07-0.10
Retrospective studies only	0.08	0.06-0.10
Prospective studies only	0.10	0.07-0.13

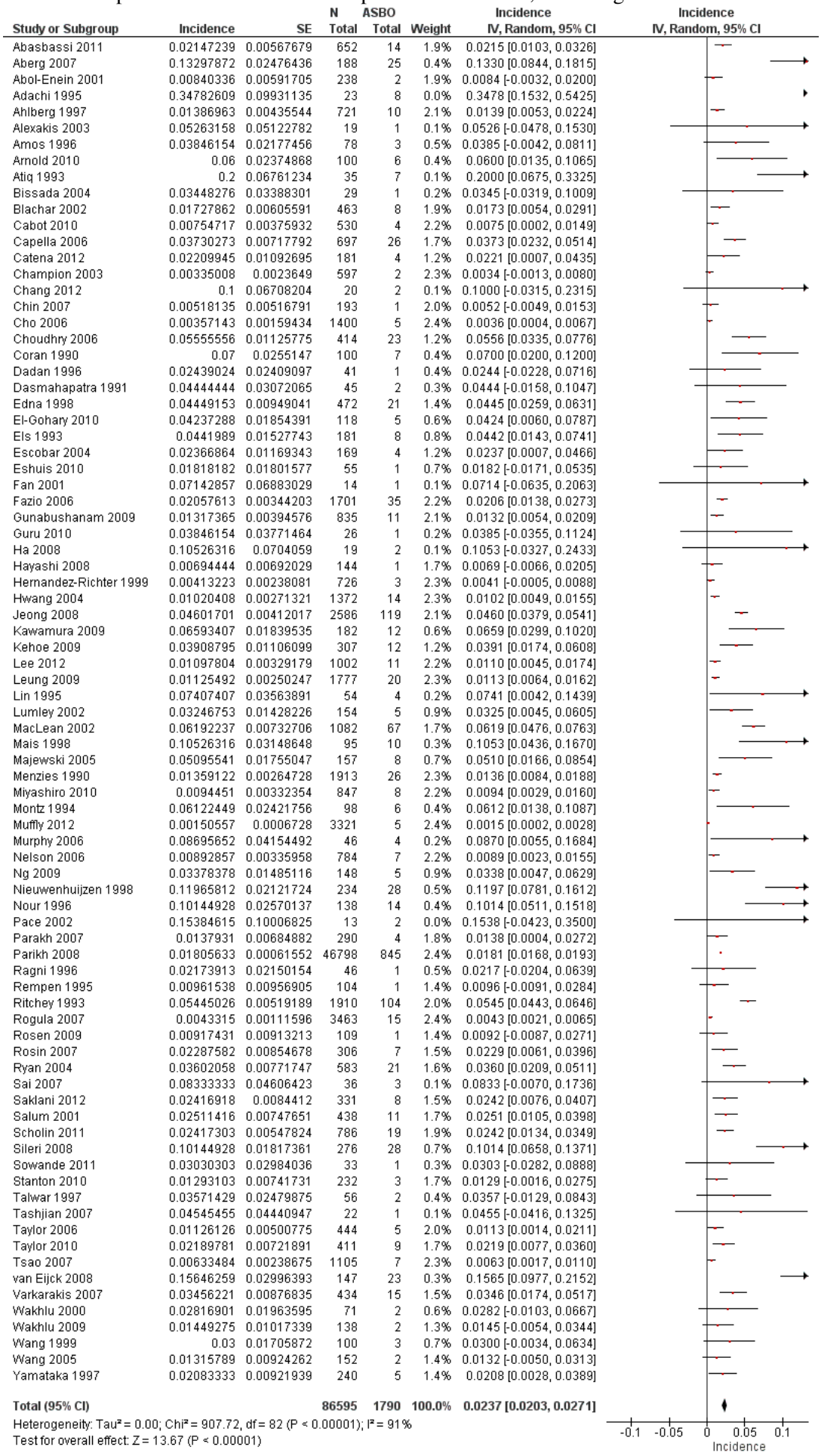
3.8.1. Sensitivity analysis of the incidence of PSBO, stratified by publication date



3.8.2. Table of sensitivity analysis of the incidence of PSBO, impact of publication date

Study	Point estimate	95% CI
All studies included	0.09	0.07-0.10
Studie published before the year 2000	0.12	0.07-0.17
Studies published in the year 2000 and later	0.07	0.06-0.09

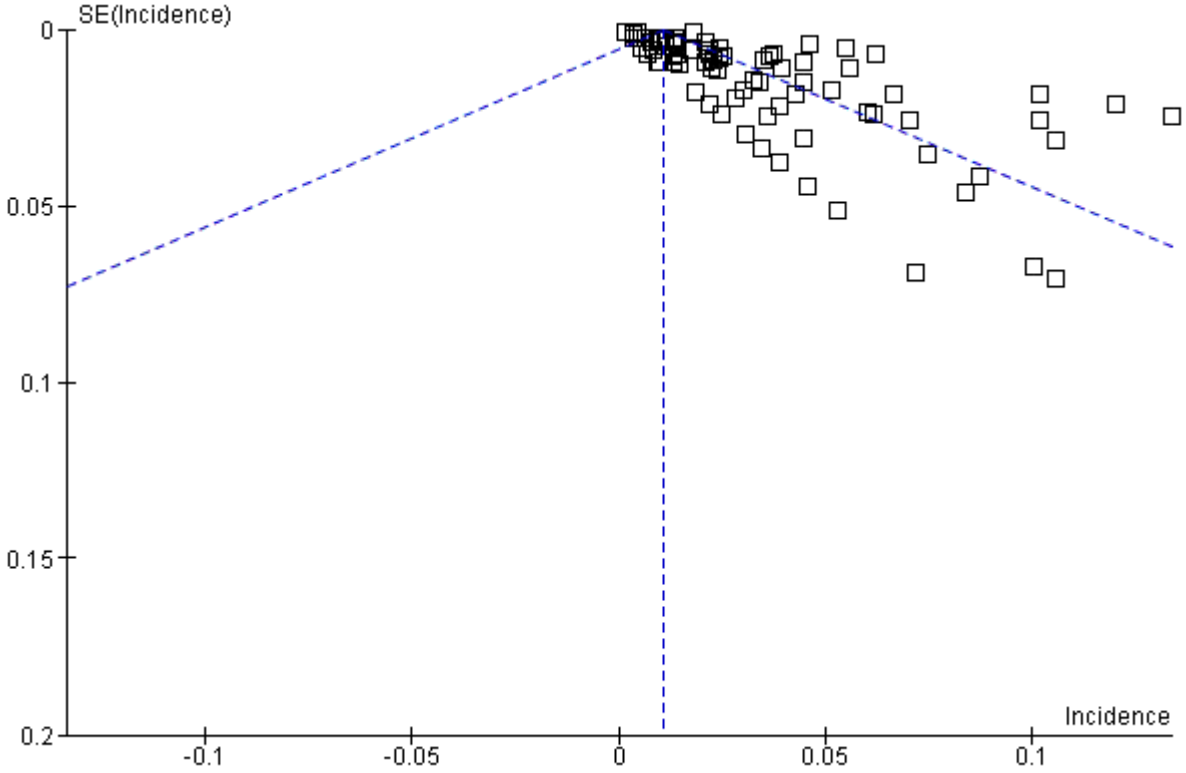
4.1.1. Forest plot of the incidence of reoperation for ASBO, including all studies



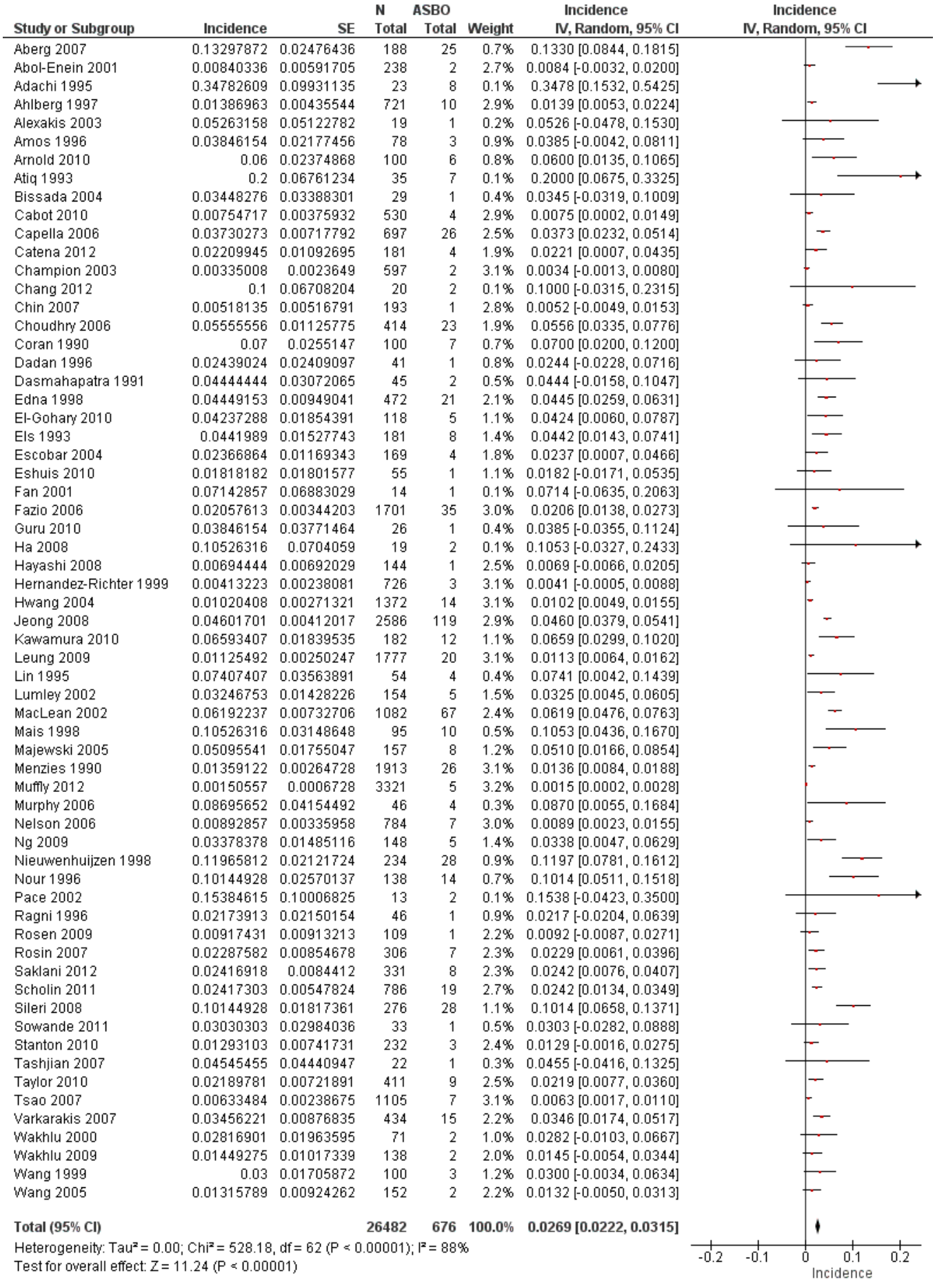
Study or Subgroup	Incidence	SE	N Total	ASBO Total	Weight	Incidence IV, Random, 95% CI
Abasbassi 2011	0.02147239	0.00567679	652	14	1.9%	0.0215 [0.0103, 0.0326]
Aberg 2007	0.13297872	0.02476436	188	25	0.4%	0.1330 [0.0844, 0.1815]
Abol-Enein 2001	0.00840336	0.00591705	238	2	1.9%	0.0084 [-0.0032, 0.0200]
Adachi 1995	0.34782609	0.09931135	23	8	0.0%	0.3478 [0.1532, 0.5425]
Ahlberg 1997	0.01386963	0.00435544	721	10	2.1%	0.0139 [0.0053, 0.0224]
Alexakis 2003	0.05263158	0.05122782	19	1	0.1%	0.0526 [-0.0478, 0.1530]
Amos 1996	0.03846154	0.02177456	78	3	0.5%	0.0385 [-0.0042, 0.0811]
Arnold 2010	0.06	0.02374868	100	6	0.4%	0.0600 [0.0135, 0.1065]
Atiq 1993	0.2	0.06761234	35	7	0.1%	0.2000 [0.0675, 0.3325]
Bissada 2004	0.03448276	0.03388301	29	1	0.2%	0.0345 [-0.0319, 0.1009]
Blachar 2002	0.01727862	0.00605591	463	8	1.9%	0.0173 [0.0054, 0.0291]
Cabot 2010	0.00754717	0.00375932	530	4	2.2%	0.0075 [0.0002, 0.0149]
Capella 2006	0.03730273	0.00717792	697	26	1.7%	0.0373 [0.0232, 0.0514]
Catena 2012	0.02209945	0.01092695	181	4	1.2%	0.0221 [0.0007, 0.0435]
Champion 2003	0.00335008	0.0023649	597	2	2.3%	0.0034 [-0.0013, 0.0080]
Chang 2012	0.1	0.06708204	20	2	0.1%	0.1000 [-0.0315, 0.2315]
Chin 2007	0.00518135	0.00516791	193	1	2.0%	0.0052 [-0.0049, 0.0153]
Cho 2006	0.00357143	0.00159434	1400	5	2.4%	0.0036 [0.0004, 0.0067]
Choudhry 2006	0.05555556	0.01125775	414	23	1.2%	0.0556 [0.0335, 0.0776]
Coran 1990	0.07	0.0255147	100	7	0.4%	0.0700 [0.0200, 0.1200]
Dadan 1996	0.02439024	0.02409097	41	1	0.4%	0.0244 [-0.0228, 0.0716]
Dasmahapatra 1991	0.04444444	0.03072065	45	2	0.3%	0.0444 [-0.0158, 0.1047]
Edna 1998	0.04449153	0.00949041	472	21	1.4%	0.0445 [0.0259, 0.0631]
El-Gohary 2010	0.04237288	0.01854391	118	5	0.6%	0.0424 [0.0060, 0.0787]
Els 1993	0.0441989	0.01527743	181	8	0.8%	0.0442 [0.0143, 0.0741]
Escobar 2004	0.02366864	0.01169343	169	4	1.2%	0.0237 [0.0007, 0.0466]
Eshuis 2010	0.01818182	0.01801577	55	1	0.7%	0.0182 [-0.0171, 0.0535]
Fan 2001	0.07142857	0.06883029	14	1	0.1%	0.0714 [-0.0635, 0.2063]
Fazio 2006	0.02057613	0.00344203	1701	35	2.2%	0.0206 [0.0138, 0.0273]
Gunabushanam 2009	0.01317365	0.00394576	835	11	2.1%	0.0132 [0.0054, 0.0209]
Guru 2010	0.03846154	0.03771464	26	1	0.2%	0.0385 [-0.0355, 0.1124]
Ha 2008	0.10526316	0.0704059	19	2	0.1%	0.1053 [-0.0327, 0.2433]
Hayashi 2008	0.00694444	0.00692029	144	1	1.7%	0.0069 [-0.0066, 0.0205]
Hernandez-Richter 1999	0.00413223	0.00238081	726	3	2.3%	0.0041 [-0.0005, 0.0088]
Hwang 2004	0.01020408	0.00271321	1372	14	2.3%	0.0102 [0.0049, 0.0155]
Jeong 2008	0.04601701	0.00412017	2586	119	2.1%	0.0460 [0.0379, 0.0541]
Kawamura 2009	0.06593407	0.01839535	182	12	0.6%	0.0659 [0.0299, 0.1020]
Kehoe 2009	0.03908795	0.01106099	307	12	1.2%	0.0391 [0.0174, 0.0608]
Lee 2012	0.01097804	0.00329179	1002	11	2.2%	0.0110 [0.0045, 0.0174]
Leung 2009	0.01125492	0.00250247	1777	20	2.3%	0.0113 [0.0064, 0.0162]
Lin 1995	0.07407407	0.03563891	54	4	0.2%	0.0741 [0.0042, 0.1439]
Lumley 2002	0.03246753	0.01428226	154	5	0.9%	0.0325 [0.0045, 0.0605]
MacLean 2002	0.06192237	0.00732706	1082	67	1.7%	0.0619 [0.0476, 0.0763]
Mais 1998	0.10526316	0.03148648	95	10	0.3%	0.1053 [0.0436, 0.1670]
Majewski 2005	0.05095541	0.01755047	157	8	0.7%	0.0510 [0.0166, 0.0854]
Menzies 1990	0.01359122	0.00264728	1913	26	2.3%	0.0136 [0.0084, 0.0188]
Miyashiro 2010	0.0094451	0.00332354	847	8	2.2%	0.0094 [0.0029, 0.0160]
Montz 1994	0.06122449	0.02421756	98	6	0.4%	0.0612 [0.0138, 0.1087]
Muffly 2012	0.00150557	0.0006728	3321	5	2.4%	0.0015 [0.0002, 0.0028]
Murphy 2006	0.08695652	0.04154492	46	4	0.2%	0.0870 [0.0055, 0.1684]
Nelson 2006	0.00892857	0.00335958	784	7	2.2%	0.0089 [0.0023, 0.0155]
Ng 2009	0.03378378	0.01485116	148	5	0.9%	0.0338 [0.0047, 0.0629]
Nieuwenhuijzen 1998	0.11965812	0.02121724	234	28	0.5%	0.1197 [0.0781, 0.1612]
Nour 1996	0.10144928	0.02570137	138	14	0.4%	0.1014 [0.0511, 0.1518]
Pace 2002	0.15384615	0.10006825	13	2	0.0%	0.1538 [-0.0423, 0.3500]
Parakh 2007	0.0137931	0.00684882	290	4	1.8%	0.0138 [0.0004, 0.0272]
Parikh 2008	0.01805633	0.00061552	46798	845	2.4%	0.0181 [0.0168, 0.0193]
Ragni 1996	0.02173913	0.02150154	46	1	0.5%	0.0217 [-0.0204, 0.0639]
Rempen 1995	0.00961538	0.00956905	104	1	1.4%	0.0096 [-0.0091, 0.0284]
Ritchey 1993	0.05445026	0.00519189	1910	104	2.0%	0.0545 [0.0443, 0.0646]
Rogula 2007	0.0043315	0.00111596	3463	15	2.4%	0.0043 [0.0021, 0.0065]
Rosen 2009	0.00917431	0.00913213	109	1	1.4%	0.0092 [-0.0087, 0.0271]
Rosin 2007	0.02287582	0.00854678	306	7	1.5%	0.0229 [0.0061, 0.0396]
Ryan 2004	0.03602058	0.00771747	583	21	1.6%	0.0360 [0.0209, 0.0511]
Sai 2007	0.08333333	0.04606423	36	3	0.1%	0.0833 [-0.0070, 0.1736]
Saklani 2012	0.02416918	0.0084412	331	8	1.5%	0.0242 [0.0076, 0.0407]
Salum 2001	0.02511416	0.00747651	438	11	1.7%	0.0251 [0.0105, 0.0398]
Scholin 2011	0.02417303	0.00547824	786	19	1.9%	0.0242 [0.0134, 0.0349]
Sileri 2008	0.10144928	0.01817361	276	28	0.7%	0.1014 [0.0658, 0.1371]
Sowande 2011	0.03030303	0.02984036	33	1	0.3%	0.0303 [-0.0282, 0.0888]
Stanton 2010	0.01293103	0.00741731	232	3	1.7%	0.0129 [-0.0016, 0.0275]
Talwar 1997	0.03571429	0.02479875	56	2	0.4%	0.0357 [-0.0129, 0.0843]
Tashjian 2007	0.04545455	0.04440947	22	1	0.1%	0.0455 [-0.0416, 0.1325]
Taylor 2006	0.01126126	0.00500775	444	5	2.0%	0.0113 [0.0014, 0.0211]
Taylor 2010	0.02189781	0.00721891	411	9	1.7%	0.0219 [0.0077, 0.0360]
Tsao 2007	0.00633484	0.00238675	1105	7	2.3%	0.0063 [0.0017, 0.0110]
van Eijck 2008	0.15646259	0.02996393	147	23	0.3%	0.1565 [0.0977, 0.2152]
Varkarakis 2007	0.03456221	0.00876835	434	15	1.5%	0.0346 [0.0174, 0.0517]
Wakhlu 2000	0.02816901	0.01963595	71	2	0.6%	0.0282 [-0.0103, 0.0667]
Wakhlu 2009	0.01449275	0.01017339	138	2	1.3%	0.0145 [-0.0054, 0.0344]
Wang 1999	0.03	0.01705872	100	3	0.7%	0.0300 [-0.0034, 0.0634]
Wang 2005	0.01315789	0.00924262	152	2	1.4%	0.0132 [-0.0050, 0.0313]
Yamataka 1997	0.02083333	0.00921939	240	5	1.4%	0.0208 [0.0028, 0.0389]
Total (95% CI)			**86595**	**1790**	**100.0%**	**0.0237 [0.0203, 0.0271]**

Heterogeneity: Tau² = 0.00; Chi² = 907.72, df = 82 (P < 0.00001); I² = 91%
Test for overall effect: Z = 13.67 (P < 0.00001)

4.1.2. Funnel plot of incidence of reoperation for ASBO, including all studies



4.2.1. Forest plot of analysis for the incidence of reoperation for ASBO in studies with adequate description of follow-up for best and worst case scenario analysis.
63 included, 37 studies without loss to follow-up (at least one long term follow-up moment in each patient)



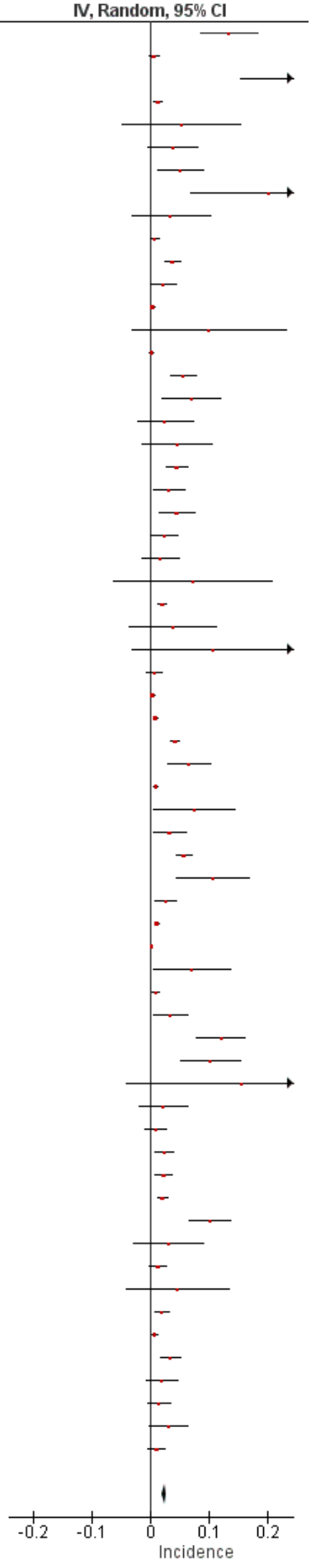
Study or Subgroup	Incidence	SE	N Total	ASBO Total	Weight	Incidence IV, Random, 95% CI
Aberg 2007	0.13297872	0.02476436	188	25	0.7%	0.1330 [0.0844, 0.1815]
Abol-Enein 2001	0.00840336	0.00591705	238	2	2.7%	0.0084 [-0.0032, 0.0200]
Adachi 1995	0.34782609	0.09931135	23	8	0.1%	0.3478 [0.1532, 0.5425]
Ahlberg 1997	0.01386963	0.00435544	721	10	2.9%	0.0139 [0.0053, 0.0224]
Alexakis 2003	0.05263158	0.05122782	19	1	0.2%	0.0526 [-0.0478, 0.1530]
Amos 1996	0.03846154	0.02177456	78	3	0.9%	0.0385 [-0.0042, 0.0811]
Arnold 2010	0.06	0.02374868	100	6	0.8%	0.0600 [0.0135, 0.1065]
Atiq 1993	0.2	0.06761234	35	7	0.1%	0.2000 [0.0675, 0.3325]
Bissada 2004	0.03448276	0.03388301	29	1	0.4%	0.0345 [-0.0319, 0.1009]
Cabot 2010	0.00754717	0.00375932	530	4	2.9%	0.0075 [0.0002, 0.0149]
Capella 2006	0.03730273	0.00717792	697	26	2.5%	0.0373 [0.0232, 0.0514]
Catena 2012	0.02209945	0.01092695	181	4	1.9%	0.0221 [0.0007, 0.0435]
Champion 2003	0.00335008	0.0023649	597	2	3.1%	0.0034 [-0.0013, 0.0080]
Chang 2012	0.1	0.06708204	20	2	0.1%	0.1000 [-0.0315, 0.2315]
Chin 2007	0.00518135	0.00516791	193	1	2.8%	0.0052 [-0.0049, 0.0153]
Choudhry 2006	0.05555556	0.01125775	414	23	1.9%	0.0556 [0.0335, 0.0776]
Coran 1990	0.07	0.0255147	100	7	0.7%	0.0700 [0.0200, 0.1200]
Dadan 1996	0.02439024	0.02409097	41	1	0.8%	0.0244 [-0.0228, 0.0716]
Dasmahapatra 1991	0.04444444	0.03072065	45	2	0.5%	0.0444 [-0.0158, 0.1047]
Edna 1998	0.04449153	0.00949041	472	21	2.1%	0.0445 [0.0259, 0.0631]
El-Gohary 2010	0.04237288	0.01854391	118	5	1.1%	0.0424 [0.0060, 0.0787]
Els 1993	0.0441989	0.01527743	181	8	1.4%	0.0442 [0.0143, 0.0741]
Escobar 2004	0.02366864	0.01169343	169	4	1.8%	0.0237 [0.0007, 0.0466]
Eshuis 2010	0.01818182	0.01801577	55	1	1.1%	0.0182 [-0.0171, 0.0535]
Fan 2001	0.07142857	0.06883029	14	1	0.1%	0.0714 [-0.0635, 0.2063]
Fazio 2006	0.02057613	0.00344203	1701	35	3.0%	0.0206 [0.0138, 0.0273]
Guru 2010	0.03846154	0.03771464	26	1	0.4%	0.0385 [-0.0355, 0.1124]
Ha 2008	0.10526316	0.0704059	19	2	0.1%	0.1053 [-0.0327, 0.2433]
Hayashi 2008	0.00694444	0.00692029	144	1	2.5%	0.0069 [-0.0066, 0.0205]
Hernandez-Richter 1999	0.00413223	0.00238081	726	3	3.1%	0.0041 [-0.0005, 0.0088]
Hwang 2004	0.01020408	0.00271321	1372	14	3.1%	0.0102 [0.0049, 0.0155]
Jeong 2008	0.04601701	0.00412017	2586	119	2.9%	0.0460 [0.0379, 0.0541]
Kawamura 2010	0.06593407	0.01839535	182	12	1.1%	0.0659 [0.0299, 0.1020]
Leung 2009	0.01125492	0.00250247	1777	20	3.1%	0.0113 [0.0064, 0.0162]
Lin 1995	0.07407407	0.03563891	54	4	0.4%	0.0741 [0.0042, 0.1439]
Lumley 2002	0.03246753	0.01428226	154	5	1.5%	0.0325 [0.0045, 0.0605]
MacLean 2002	0.06192237	0.00732706	1082	67	2.4%	0.0619 [0.0476, 0.0763]
Mais 1998	0.10526316	0.03148648	95	10	0.5%	0.1053 [0.0436, 0.1670]
Majewski 2005	0.05095541	0.01755047	157	8	1.2%	0.0510 [0.0166, 0.0854]
Menzies 1990	0.01359122	0.00264728	1913	26	3.1%	0.0136 [0.0084, 0.0188]
Muffly 2012	0.00150557	0.0006728	3321	5	3.2%	0.0015 [0.0002, 0.0028]
Murphy 2006	0.08695652	0.04154492	46	4	0.3%	0.0870 [0.0055, 0.1684]
Nelson 2006	0.00892857	0.00335958	784	7	3.0%	0.0089 [0.0023, 0.0155]
Ng 2009	0.03378378	0.01485116	148	5	1.4%	0.0338 [0.0047, 0.0629]
Nieuwenhuijzen 1998	0.11965812	0.02121724	234	28	0.9%	0.1197 [0.0781, 0.1612]
Nour 1996	0.10144928	0.02570137	138	14	0.7%	0.1014 [0.0511, 0.1518]
Pace 2002	0.15384615	0.10006825	13	2	0.1%	0.1538 [-0.0423, 0.3500]
Ragni 1996	0.02173913	0.02150154	46	1	0.9%	0.0217 [-0.0204, 0.0639]
Rosen 2009	0.00917431	0.00913213	109	1	2.2%	0.0092 [-0.0087, 0.0271]
Rosin 2007	0.02287582	0.00854678	306	7	2.3%	0.0229 [0.0061, 0.0396]
Saklani 2012	0.02416918	0.0084412	331	8	2.3%	0.0242 [0.0076, 0.0407]
Scholin 2011	0.02417303	0.00547824	786	19	2.7%	0.0242 [0.0134, 0.0349]
Sileri 2008	0.10144928	0.01817361	276	28	1.1%	0.1014 [0.0658, 0.1371]
Sowande 2011	0.03030303	0.02984036	33	1	0.5%	0.0303 [-0.0282, 0.0888]
Stanton 2010	0.01293103	0.00741731	232	3	2.4%	0.0129 [-0.0016, 0.0275]
Tashjian 2007	0.04545455	0.04440947	22	1	0.3%	0.0455 [-0.0416, 0.1325]
Taylor 2010	0.02189781	0.00721891	411	9	2.5%	0.0219 [0.0077, 0.0360]
Tsao 2007	0.00633484	0.00238675	1105	7	3.1%	0.0063 [0.0017, 0.0110]
Varkarakis 2007	0.03456221	0.00876835	434	15	2.2%	0.0346 [0.0174, 0.0517]
Wakhlu 2000	0.02816901	0.01963595	71	2	1.0%	0.0282 [-0.0103, 0.0667]
Wakhlu 2009	0.01449275	0.01017339	138	2	2.0%	0.0145 [-0.0054, 0.0344]
Wang 1999	0.03	0.01705872	100	3	1.2%	0.0300 [-0.0034, 0.0634]
Wang 2005	0.01315789	0.00924262	152	2	2.2%	0.0132 [-0.0050, 0.0313]
Total (95% CI)			**26482**	**676**	**100.0%**	**0.0269 [0.0222, 0.0315]**

Heterogeneity: Tau² = 0.00; Chi² = 528.18, df = 62 (P < 0.00001); I² = 88%
Test for overall effect: Z = 11.24 (P < 0.00001)

4.2.2. Forest plot of best case analysis for the incidence of reoperation for ASBO

Study or Subgroup	Incidence	SE	N Total	ASBO Total	Weight	Incidence IV, Random, 95% CI
Aberg 2007	0.13297872	0.02476436	188	25	0.6%	0.1330 [0.0844, 0.1815]
Abol-Enein 2001	0.00581395	0.00409912	344	2	3.0%	0.0058 [-0.0022, 0.0138]
Adachi 1995	0.34782609	0.09931135	23	8	0.0%	0.3478 [0.1532, 0.5425]
Ahlberg 1997	0.01264223	0.00397247	791	10	3.0%	0.0126 [0.0049, 0.0204]
Alexakis 2003	0.05263158	0.05122782	19	1	0.2%	0.0526 [-0.0478, 0.1530]
Amos 1996	0.03846154	0.02177456	78	3	0.7%	0.0385 [-0.0042, 0.0811]
Arnold 2010	0.05042017	0.02005831	119	6	0.8%	0.0504 [0.0111, 0.0897]
Atiq 1993	0.2	0.06761234	35	7	0.1%	0.2000 [0.0675, 0.3325]
Bissada 2004	0.03448276	0.03388301	29	1	0.3%	0.0345 [-0.0319, 0.1009]
Cabot 2010	0.00727273	0.00362312	550	4	3.0%	0.0073 [0.0002, 0.0144]
Capella 2006	0.03730273	0.00717792	697	26	2.4%	0.0373 [0.0232, 0.0514]
Catena 2012	0.02209945	0.01092695	181	4	1.7%	0.0221 [0.0007, 0.0435]
Champion 2003	0.00281294	0.00198625	711	2	3.2%	0.0028 [-0.0011, 0.0067]
Chang 2012	0.1	0.06708204	20	2	0.1%	0.1000 [-0.0315, 0.2315]
Chin 2007	0.002	0.001998	500	1	3.2%	0.0020 [-0.0019, 0.0059]
Choudhry 2006	0.05555556	0.01125775	414	23	1.7%	0.0556 [0.0335, 0.0776]
Coran 1990	0.07	0.0255147	100	7	0.5%	0.0700 [0.0200, 0.1200]
Dadan 1996	0.02439024	0.02409097	41	1	0.6%	0.0244 [-0.0228, 0.0716]
Dasmahapatra 1991	0.04444444	0.03072065	45	2	0.4%	0.0444 [-0.0158, 0.1047]
Edna 1998	0.04449153	0.00949041	472	21	2.0%	0.0445 [0.0259, 0.0631]
El-Gohary 2010	0.0310559	0.01367126	161	5	1.4%	0.0311 [0.0043, 0.0579]
Els 1993	0.0441989	0.01527743	181	8	1.2%	0.0442 [0.0143, 0.0741]
Escobar 2004	0.02366864	0.01169343	169	4	1.6%	0.0237 [0.0007, 0.0466]
Eshuis 2010	0.01666667	0.01652719	60	1	1.1%	0.0167 [-0.0157, 0.0491]
Fan 2001	0.07142857	0.06883029	14	1	0.1%	0.0714 [-0.0635, 0.2063]
Fazio 2006	0.01954216	0.00327079	1791	35	3.1%	0.0195 [0.0131, 0.0260]
Guru 2010	0.03846154	0.03771464	26	1	0.3%	0.0385 [-0.0355, 0.1124]
Ha 2008	0.10526316	0.0704059	19	2	0.1%	0.1053 [-0.0327, 0.2433]
Hayashi 2008	0.00666667	0.00664441	150	1	2.5%	0.0067 [-0.0064, 0.0197]
Hernandez-Richter 1999	0.00330033	0.0019023	909	3	3.3%	0.0033 [-0.0004, 0.0070]
Hwang 2004	0.00816327	0.0021728	1715	14	3.2%	0.0082 [0.0039, 0.0124]
Jeong 2008	0.04197531	0.00376625	2835	119	3.0%	0.0420 [0.0346, 0.0494]
Kawamura 2010	0.06593407	0.01839535	182	12	0.9%	0.0659 [0.0299, 0.1020]
Leung 2009	0.00857633	0.00190948	2332	20	3.3%	0.0086 [0.0048, 0.0123]
Lin 1995	0.07407407	0.03563891	54	4	0.3%	0.0741 [0.0042, 0.1439]
Lumley 2002	0.03225806	0.01419166	155	5	1.3%	0.0323 [0.0044, 0.0601]
MacLean 2002	0.05687606	0.00674802	1178	67	2.5%	0.0569 [0.0437, 0.0701]
Mais 1998	0.10526316	0.03148648	95	10	0.4%	0.1053 [0.0436, 0.1670]
Majewski 2005	0.02580645	0.00900546	310	8	2.0%	0.0258 [0.0082, 0.0435]
Menzies 1990	0.01032976	0.00201534	2517	26	3.2%	0.0103 [0.0064, 0.0143]
Muffly 2012	0.00150331	0.00067179	3326	5	3.3%	0.0015 [0.0002, 0.0028]
Murphy 2006	0.07017544	0.03383418	57	4	0.3%	0.0702 [0.0039, 0.1365]
Nelson 2006	0.00892857	0.00335958	784	7	3.1%	0.0089 [0.0023, 0.0155]
Ng 2009	0.03378378	0.01485116	148	5	1.2%	0.0338 [0.0047, 0.0629]
Nieuwenhuijzen 1998	0.11965812	0.02121724	234	28	0.7%	0.1197 [0.0781, 0.1612]
Nour 1996	0.10144928	0.02570137	138	14	0.5%	0.1014 [0.0511, 0.1518]
Pace 2002	0.15384615	0.10006825	13	2	0.0%	0.1538 [-0.0423, 0.3500]
Ragni 1996	0.02173913	0.02150154	46	1	0.7%	0.0217 [-0.0204, 0.0639]
Rosen 2009	0.00917431	0.00913213	109	1	2.0%	0.0092 [-0.0087, 0.0271]
Rosin 2007	0.02287582	0.00854678	306	7	2.1%	0.0229 [0.0061, 0.0396]
Saklani 2012	0.02228412	0.00779035	359	8	2.3%	0.0223 [0.0070, 0.0376]
Scholin 2011	0.01968912	0.0044723	965	19	2.9%	0.0197 [0.0109, 0.0285]
Sileri 2008	0.10144928	0.01817361	276	28	0.9%	0.1014 [0.0658, 0.1371]
Sowande 2011	0.03030303	0.02984036	33	1	0.4%	0.0303 [-0.0282, 0.0888]
Stanton 2010	0.01293103	0.00741731	232	3	2.3%	0.0129 [-0.0016, 0.0275]
Tashjian 2007	0.04545455	0.04440947	22	1	0.2%	0.0455 [-0.0416, 0.1325]
Taylor 2010	0.01894737	0.00625567	475	9	2.6%	0.0189 [0.0067, 0.0312]
Tsao 2007	0.00633484	0.00238675	1105	7	3.2%	0.0063 [0.0017, 0.0110]
Varkarakis 2007	0.03348214	0.00849909	448	15	2.1%	0.0335 [0.0168, 0.0501]
Wakhlu 2000	0.01923077	0.01346682	104	2	1.4%	0.0192 [-0.0072, 0.0456]
Wakhlu 2009	0.01449275	0.01017339	138	2	1.8%	0.0145 [-0.0054, 0.0344]
Wang 1999	0.03	0.01705872	100	3	1.0%	0.0300 [-0.0034, 0.0634]
Wang 2005	0.01036269	0.00728947	193	2	2.4%	0.0104 [-0.0039, 0.0246]
Total (95% CI)			**29821**	**676**	**100.0%**	**0.0235 [0.0194, 0.0275]**

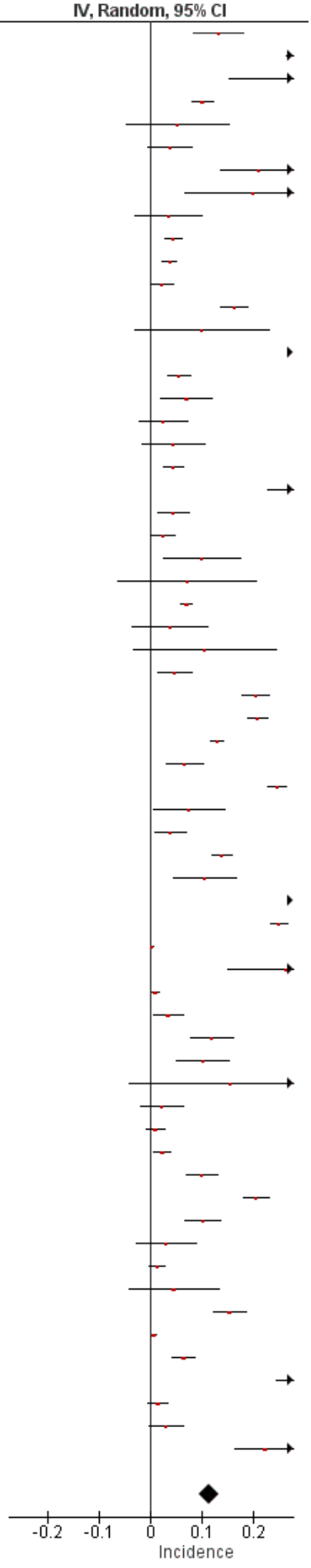
Heterogeneity: Tau² = 0.00; Chi² = 518.21, df = 62 (P < 0.00001); I² = 88%
Test for overall effect: Z = 11.36 (P < 0.00001)



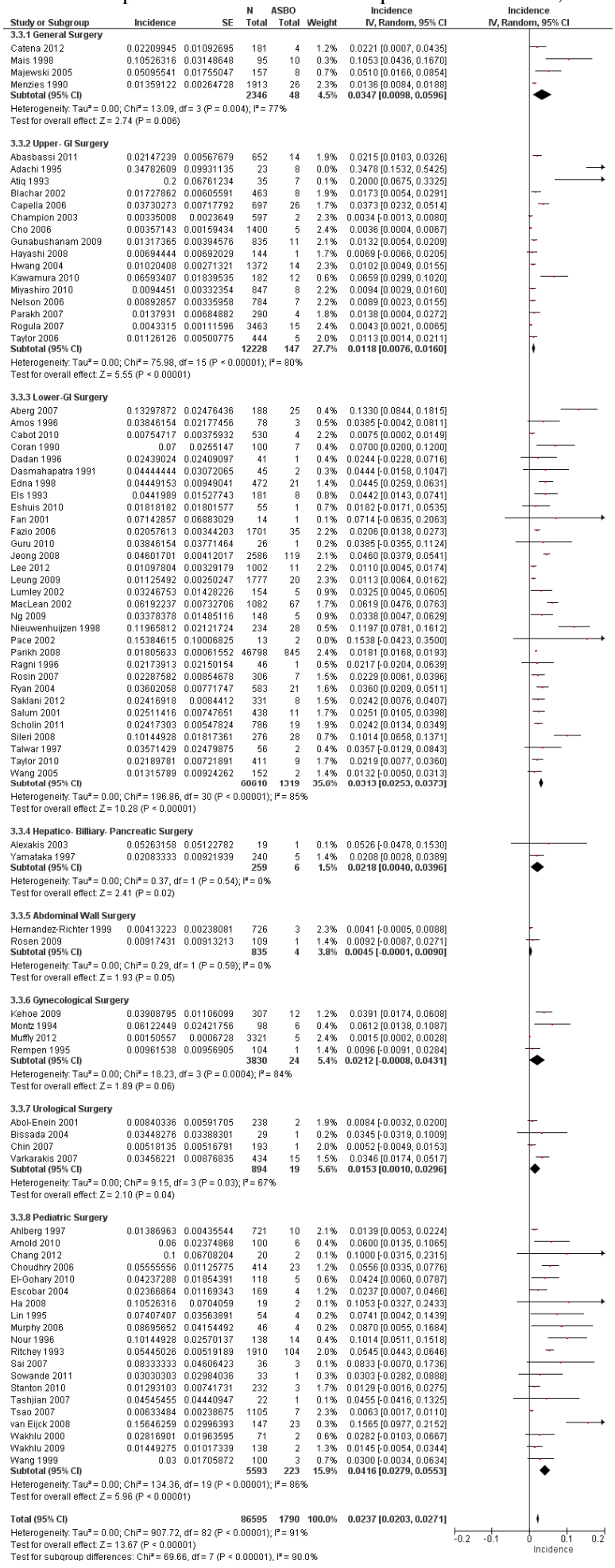
4.2.3. Forest plot of worst case analysis for the incidence of reoperation for ASBO

Study or Subgroup	Incidence	SE	N Total	ASBO Total	Weight	Incidence IV, Random, 95% CI
Aberg 2007	0.13297872	0.02476436	188	25	1.6%	0.1330 [0.0844, 0.1815]
Abol-Enein 2001	0.31395349	0.02502247	344	108	1.6%	0.3140 [0.2649, 0.3630]
Adachi 1995	0.34782609	0.09931135	23	8	0.6%	0.3478 [0.1532, 0.5425]
Ahlberg 1997	0.1011378	0.0107205	791	80	1.8%	0.1011 [0.0801, 0.1221]
Alexakis 2003	0.05263158	0.05122782	19	1	1.2%	0.0526 [-0.0478, 0.1530]
Amos 1996	0.03846154	0.02177456	78	3	1.7%	0.0385 [-0.0042, 0.0811]
Arnold 2010	0.21008403	0.03734337	119	25	1.4%	0.2101 [0.1369, 0.2833]
Atiq 1993	0.2	0.06761234	35	7	1.0%	0.2000 [0.0675, 0.3325]
Bissada 2004	0.03448276	0.03388301	29	1	1.5%	0.0345 [-0.0319, 0.1009]
Cabot 2010	0.04363636	0.00871073	550	24	1.8%	0.0436 [0.0266, 0.0607]
Capella 2006	0.03730273	0.00717792	697	26	1.8%	0.0373 [0.0232, 0.0514]
Catena 2012	0.02209945	0.01092695	181	4	1.8%	0.0221 [0.0007, 0.0435]
Champion 2003	0.16315049	0.01385744	711	116	1.8%	0.1632 [0.1360, 0.1903]
Chang 2012	0.1	0.06708204	20	2	1.0%	0.1000 [-0.0315, 0.2315]
Chin 2007	0.616	0.02175059	500	308	1.7%	0.6160 [0.5734, 0.6586]
Choudhry 2006	0.05555556	0.01125775	414	23	1.8%	0.0556 [0.0335, 0.0776]
Coran 1990	0.07	0.0255147	100	7	1.6%	0.0700 [0.0200, 0.1200]
Dadan 1996	0.02439024	0.02409097	41	1	1.6%	0.0244 [-0.0228, 0.0716]
Dasmahapatra 1991	0.04444444	0.03072065	45	2	1.5%	0.0444 [-0.0158, 0.1047]
Edna 1998	0.04449153	0.00949041	472	21	1.8%	0.0445 [0.0259, 0.0631]
El-Gohary 2010	0.29813665	0.03605131	161	48	1.5%	0.2981 [0.2275, 0.3688]
Els 1993	0.0441989	0.01527743	181	8	1.7%	0.0442 [0.0143, 0.0741]
Escobar 2004	0.02366864	0.01169343	169	4	1.8%	0.0237 [0.0007, 0.0466]
Eshuis 2010	0.1	0.03872983	60	6	1.4%	0.1000 [0.0241, 0.1759]
Fan 2001	0.07142857	0.06883029	14	1	0.9%	0.0714 [-0.0635, 0.2063]
Fazio 2006	0.06979341	0.00602073	1791	125	1.8%	0.0698 [0.0580, 0.0816]
Guru 2010	0.03846154	0.03771464	26	1	1.4%	0.0385 [-0.0355, 0.1124]
Ha 2008	0.10526316	0.0704059	19	2	0.9%	0.1053 [-0.0327, 0.2433]
Hayashi 2008	0.04666667	0.01722186	150	7	1.7%	0.0467 [0.0129, 0.0804]
Hernandez-Richter 1999	0.20462046	0.01338073	909	186	1.8%	0.2046 [0.1784, 0.2308]
Hwang 2004	0.20816327	0.00980365	1715	357	1.8%	0.2082 [0.1889, 0.2274]
Jeong 2008	0.129806	0.00631217	2835	368	1.8%	0.1298 [0.1174, 0.1422]
Kawamura 2010	0.06593407	0.01839535	182	12	1.7%	0.0659 [0.0299, 0.1020]
Leung 2009	0.24656947	0.00892539	2332	575	1.8%	0.2466 [0.2291, 0.2641]
Lin 1995	0.07407407	0.03563891	54	4	1.5%	0.0741 [0.0042, 0.1439]
Lumley 2002	0.03870968	0.01549427	155	6	1.7%	0.0387 [0.0083, 0.0691]
MacLean 2002	0.13837012	0.01006025	1178	163	1.8%	0.1384 [0.1187, 0.1581]
Mais 1998	0.10526316	0.03148648	95	10	1.5%	0.1053 [0.0436, 0.1670]
Majewski 2005	0.51935484	0.02837681	310	161	1.6%	0.5194 [0.4637, 0.5750]
Menzies 1990	0.25029797	0.00863438	2517	630	1.8%	0.2503 [0.2334, 0.2672]
Muffly 2012	0.00300661	0.00094934	3326	10	1.8%	0.0030 [0.0011, 0.0049]
Murphy 2006	0.26315789	0.05832544	57	15	1.1%	0.2632 [0.1488, 0.3775]
Nelson 2006	0.00892857	0.00335958	784	7	1.8%	0.0089 [0.0023, 0.0155]
Ng 2009	0.03378378	0.01485116	148	5	1.8%	0.0338 [0.0047, 0.0629]
Nieuwenhuijzen 1998	0.11965812	0.02121724	234	28	1.7%	0.1197 [0.0781, 0.1612]
Nour 1996	0.10144928	0.02570137	138	14	1.6%	0.1014 [0.0511, 0.1518]
Pace 2002	0.15384615	0.10006825	13	2	0.6%	0.1538 [-0.0423, 0.3500]
Ragni 1996	0.02173913	0.02150154	46	1	1.7%	0.0217 [-0.0204, 0.0639]
Rosen 2009	0.00917431	0.00913213	109	1	1.8%	0.0092 [-0.0087, 0.0271]
Rosin 2007	0.02287582	0.00854678	306	7	1.8%	0.0229 [0.0061, 0.0396]
Saklani 2012	0.10027855	0.01585298	359	36	1.7%	0.1003 [0.0692, 0.1313]
Scholin 2011	0.20518135	0.01299988	965	198	1.8%	0.2052 [0.1797, 0.2307]
Sileri 2008	0.10144928	0.01817361	276	28	1.7%	0.1014 [0.0658, 0.1371]
Sowande 2011	0.03030303	0.02984036	33	1	1.6%	0.0303 [-0.0282, 0.0888]
Stanton 2010	0.01293103	0.00741731	232	3	1.8%	0.0129 [-0.0016, 0.0275]
Tashjian 2007	0.04545455	0.04440947	22	1	1.3%	0.0455 [-0.0416, 0.1325]
Taylor 2010	0.15368421	0.01654756	475	73	1.7%	0.1537 [0.1213, 0.1861]
Tsao 2007	0.00633484	0.00238675	1105	7	1.8%	0.0063 [0.0017, 0.0110]
Varkarakis 2007	0.06473214	0.01162489	448	29	1.8%	0.0647 [0.0419, 0.0875]
Wakhlu 2000	0.33653846	0.04633494	104	35	1.3%	0.3365 [0.2457, 0.4274]
Wakhlu 2009	0.01449275	0.01017339	138	2	1.8%	0.0145 [-0.0054, 0.0344]
Wang 1999	0.03	0.01705872	100	3	1.7%	0.0300 [-0.0034, 0.0634]
Wang 2005	0.22279793	0.02995325	193	43	1.6%	0.2228 [0.1641, 0.2815]
Total (95% CI)			**29821**	**4015**	**100.0%**	**0.1132 [0.0943, 0.1321]**

Heterogeneity: Tau² = 0.01; Chi² = 4816.11, df = 62 (P < 0.00001); I² = 99%
Test for overall effect: Z = 11.74 (P < 0.00001)

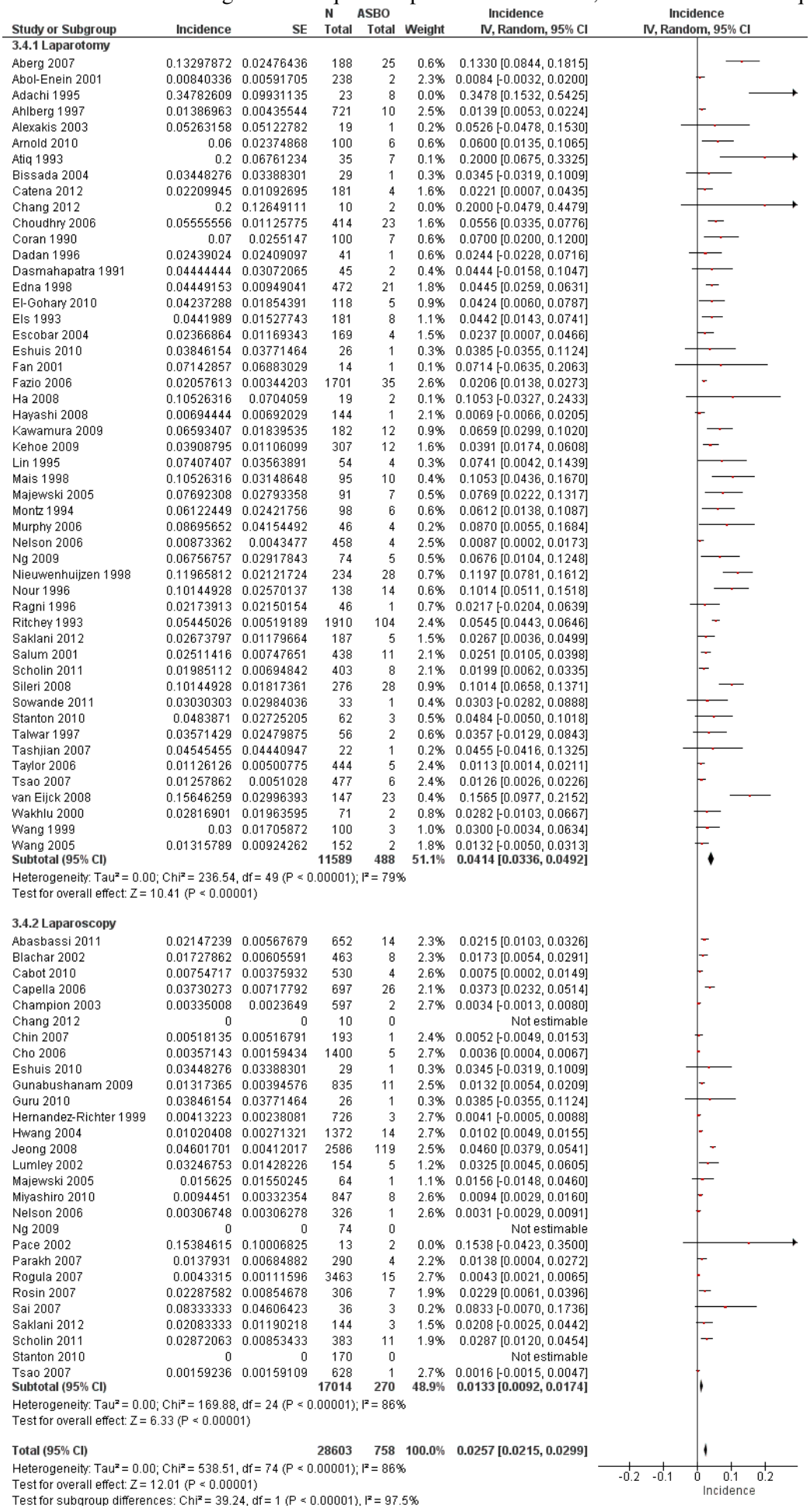


4.3.1. Forest plot of the incidence of reoperation for ASBO, stratified by anatomical location



4.4.1. Forest plot of the incidence of reoperation for ASBO, stratified by surgical technique

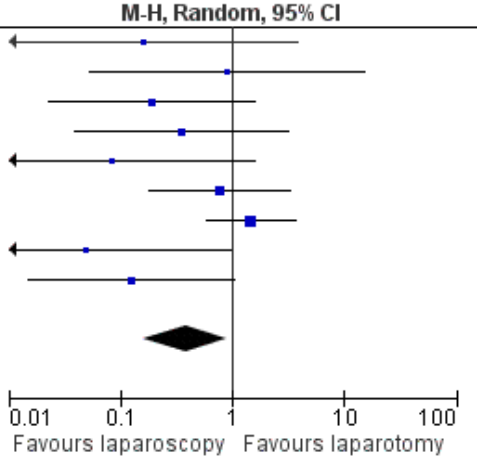
14 studies excluded. Surgical technique not specified in 9 studies, 5 studies both techniques without data per subgroup



4.4.2. Forest plot for the incidence of reoperation for ASBO compared between laparoscopy and laparotomy

Study or Subgroup	Laparoscopy Events	Laparoscopy Total	Laparotomy Events	Laparotomy Total	Weight	Odds Ratio M-H, Random, 95% CI
Chang 2012	0	10	2	10	6.0%	0.16 [0.01, 3.85]
Eshuis 2010	1	29	1	26	7.2%	0.89 [0.05, 15.04]
Majewski 2005	1	64	7	91	10.9%	0.19 [0.02, 1.59]
Nelson 2006	1	326	4	458	10.4%	0.35 [0.04, 3.14]
Ng 2009	0	74	5	74	6.9%	0.08 [0.00, 1.56]
Saklani 2012	3	144	5	187	17.0%	0.77 [0.18, 3.30]
Scholin 2011	11	383	8	403	23.9%	1.46 [0.58, 3.67]
Stanton 2010	0	170	3	62	6.6%	0.05 [0.00, 0.98]
Tsao 2007	1	628	6	477	10.9%	0.13 [0.02, 1.04]
Total (95% CI)		**1828**		**1788**	**100.0%**	**0.38 [0.16, 0.91]**
Total events	18		41			

Heterogeneity: Tau² = 0.58; Chi² = 12.69, df = 8 (P = 0.12); I² = 37%
Test for overall effect: Z = 2.19 (P = 0.03)

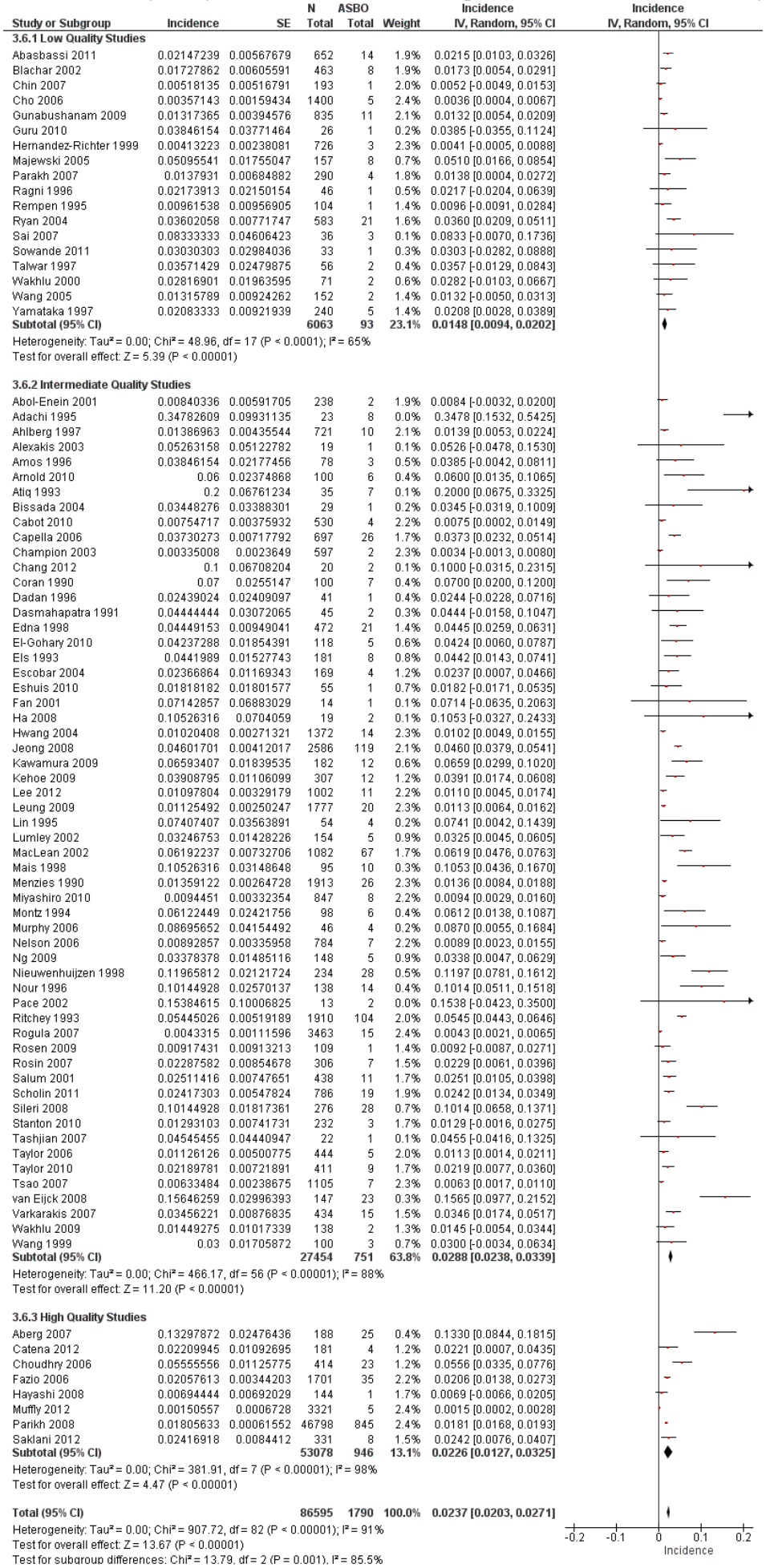


4.5.1. Sensitivity analysis of the incidence of reoperation for ASBO, impact of individual studies

Study	Point estimate	95%CI
All available studies	0.02	0.02-0.03
Abasbassi 2011	0.02	0.02-0.03
Aberg 2007	0.02	0.02-0.03
Abol-Enein 2001	0.02	0.02-0.03
Adachi 1995	0.02	0.02-0.03
Ahlberg 1997	0.02	0.02-0.03
Alexakis 2003	0.02	0.02-0.03
Amos 1996	0.02	0.02-0.03
Arnold 2010	0.02	0.02-0.03
Atiq 1993	0.02	0.02-0.03
Bissada 2004	0.02	0.02-0.03
Blachar 2002	0.02	0.02-0.03
Cabot 2010	0.02	0.02-0.03
Capella 2006	0.02	0.02-0.03
Catena 2012	0.02	0.02-0.03
Champion 2003	0.02	0.02-0.03
Chang 2012	0.02	0.02-0.03
Chin 2007	0.02	0.02-0.03
Cho 2006	0.02	0.02-0.03
Choudhry 2006	0.02	0.02-0.03
Coran 1990	0.02	0.02-0.03
Dadan 1996	0.02	0.02-0.03
Dasmahapatra 1991	0.02	0.02-0.03
Edna 1998	0.02	0.02-0.03
El-Gohary 2010	0.02	0.02-0.03
Els 1993	0.02	0.02-0.03
Escobar 2004	0.02	0.02-0.03
Eshuis 2010	0.02	0.02-0.03
Fan 2001	0.02	0.02-0.03
Fazio 2006	0.02	0.02-0.03
Gunabushanam 2009	0.02	0.02-0.03
Guru 2010	0.02	0.02-0.03
Ha 2008	0.02	0.02-0.03
Hayashi 2008	0.02	0.02-0.03
Hernandez-Richter 1999	0.02	0.02-0.03
Hwang 2004	0.02	0.02-0.03
Jeong 2008	0.02	0.02-0.03
Kawamura 2009	0.02	0.02-0.03
Kehoe 2009	0.02	0.02-0.03
Lee 2012	0.02	0.02-0.03
Leung 2009	0.02	0.02-0.03
Lin 1995	0.02	0.02-0.03
Lumley 2002	0.02	0.02-0.03
MacLean 2002	0.02	0.02-0.03
Mais 1998	0.02	0.02-0.03
Majewski 2005	0.02	0.02-0.03
Menzies 1990	0.02	0.02-0.03
Miyashiro 2010	0.02	0.02-0.03
Montz 1994	0.02	0.02-0.03
Muffly 2012	0.02	0.02-0.03
Murphy 2006	0.02	0.02-0.03
Nelson 2006	0.02	0.02-0.03
Ng 2009	0.02	0.02-0.03
Nieuwenhuijzen 1998	0.02	0.02-0.03
Nour 1996	0.02	0.02-0.03
Pace 2002	0.02	0.02-0.03
Parakh 2007	0.02	0.02-0.03
Parikh 2008	0.02	0.02-0.03
Ragni 1996	0.02	0.02-0.03
Rempen 1995	0.02	0.02-0.03
Ritchey 1993	0.02	0.02-0.03
Rogula 2007	0.02	0.02-0.03

Rosen 2009	0.02	0.02-0.03
Rosin 2007	0.02	0.02-0.03
Ryan 2004	0.02	0.02-0.03
Sai 2007	0.02	0.02-0.03
Saklani 2012	0.02	0.02-0.03
Salum 2001	0.02	0.02-0.03
Scholin 2011	0.02	0.02-0.03
Sileri 2008	0.02	0.02-0.03
Sowande 2011	0.02	0.02-0.03
Stanton 2010	0.02	0.02-0.03
Talwar 1997	0.02	0.02-0.03
Tashjian 2007	0.02	0.02-0.03
Taylor 2006	0.02	0.02-0.03
Taylor 2010	0.02	0.02-0.03
Tsao 2007	0.02	0.02-0.03
van Eijck 2008	0.02	0.02-0.03
Varkarakis 2007	0.02	0.02-0.03
Wakhlu 2000	0.02	0.02-0.03
Wakhlu 2009	0.02	0.02-0.03
Wang 1999	0.02	0.02-0.03
Wang 2005	0.02	0.02-0.03
Yamataka 1997	0.02	0.02-0.03

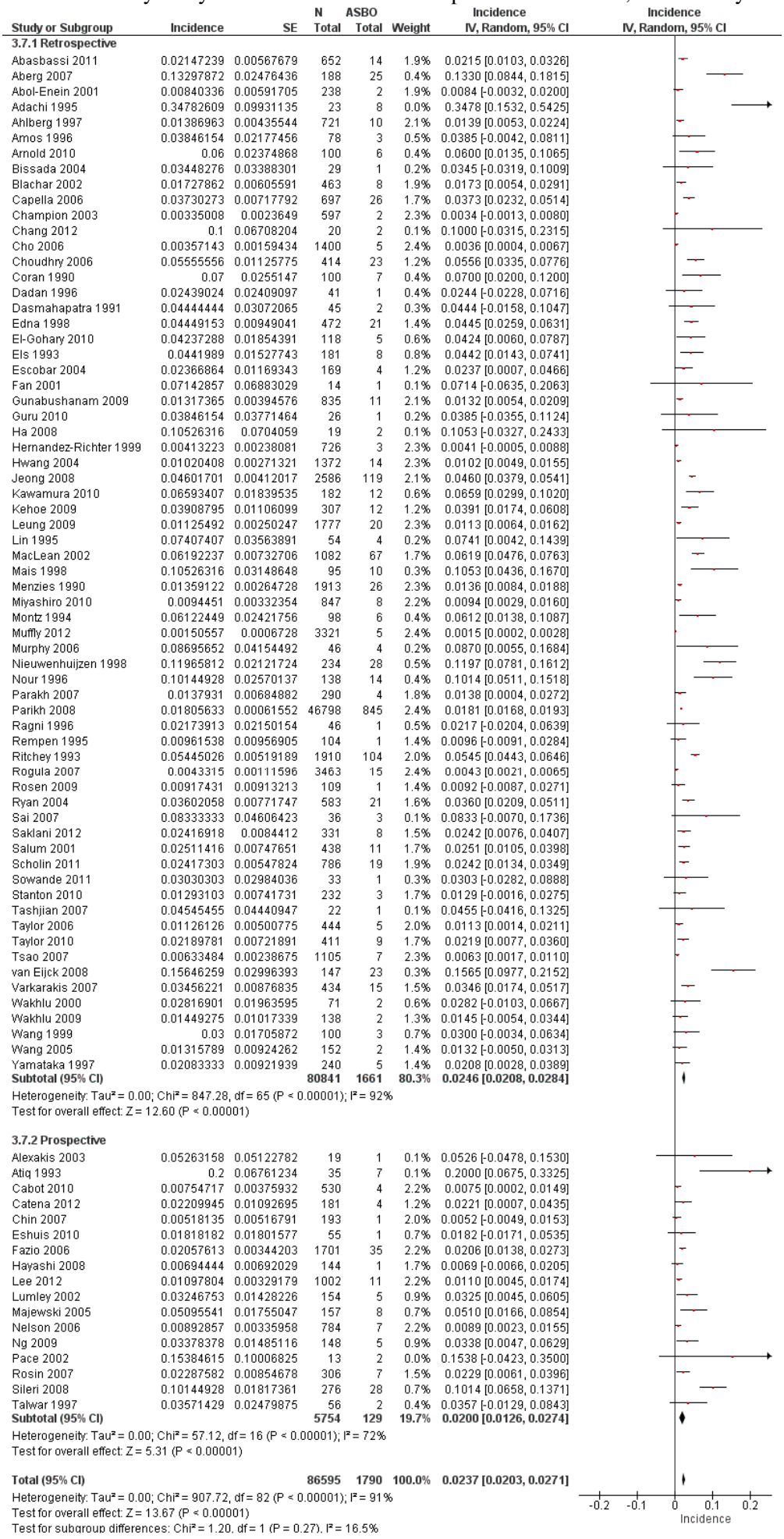
4.6.1. Sensitivity analysis of the incidence of reoperation for ASBO, stratified by quality of study



4.6.2. Table of Sensitivity analysis of the incidence of ASBO, impact of quality of studies

Study	Point estimate	95%CI
All available studies	0.0237	0.0203-0.0271
Low Quality studies only	0.0148	0.0094-0.0202
Intermediate Quality studies only	0.0288	0.0238-0.0339
High studies only	0.0226	0.0127-0.0325

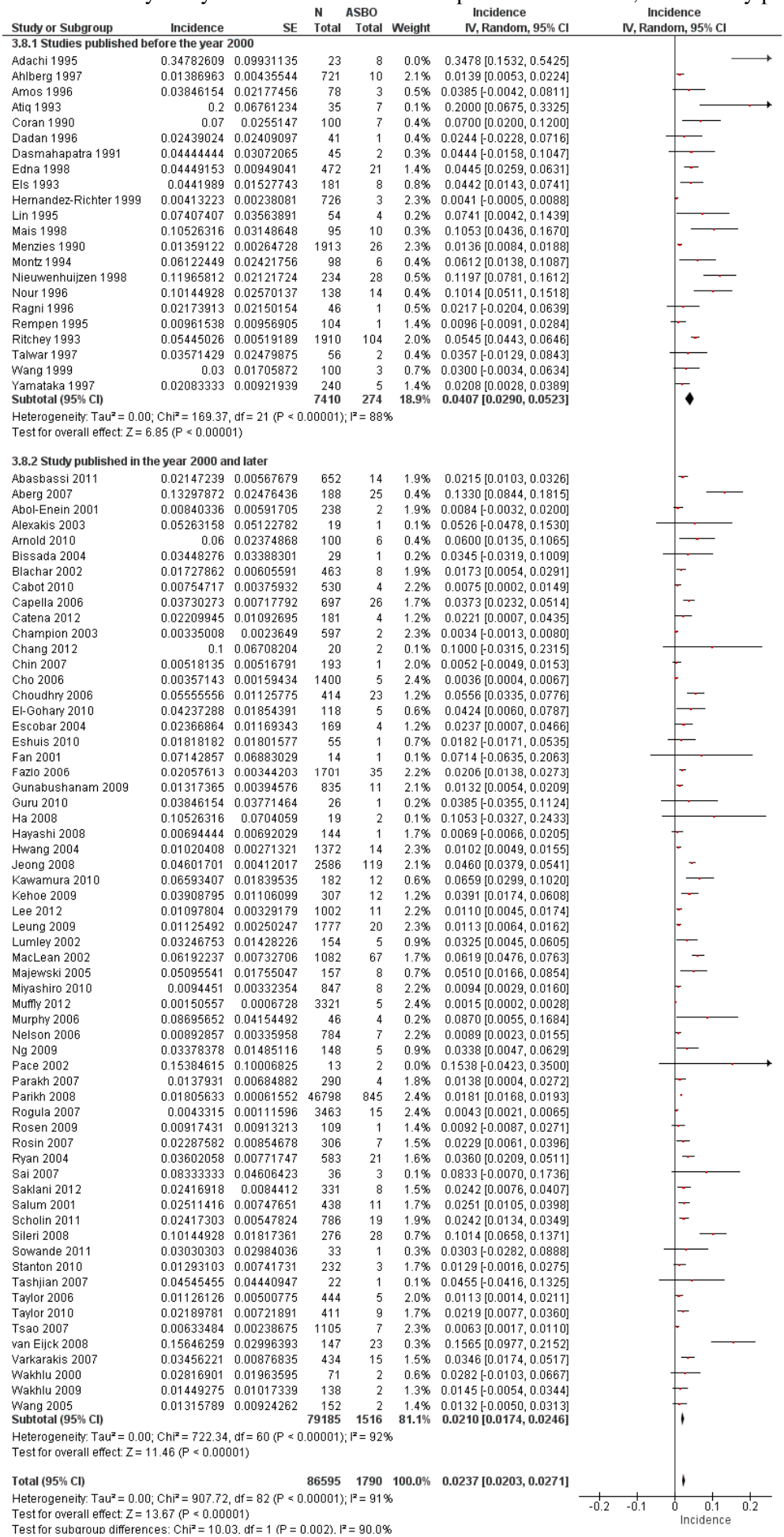
4.7.1. Sensitivity analysis of the incidence of reoperation for ASBO, stratified by study design



4.7.2. Table of sensitivity analysis of the incidence of reoperation for ASBO, impact of study design

Study	Point estimate	95%CI
All available studies	0.0237	0.0203-0.0271
Retrospective studies only	0.0246	0.0208-0.0284
Prospective studies only	0.0200	0.0126-0.0274

4.8.1. Sensitivity analysis of the incidence of reoperation for ASBO, stratified by publication date



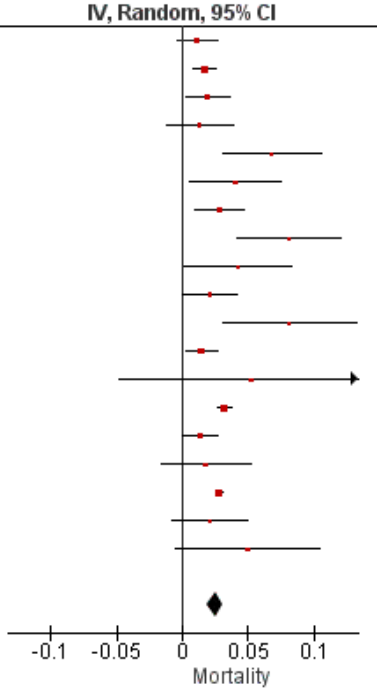
4.8.2. Table of sensitivity analysis of the incidence of reoperation for ASBO, impact of publication date

Study	Point estimate	95% CI
All studies included	0.0237	0.0203-0.0271
Studie published before the year 2000	0.0407	0.0290-0.0523
Studies published in the year 2000 and later	0.0210	0.0174-0.0246

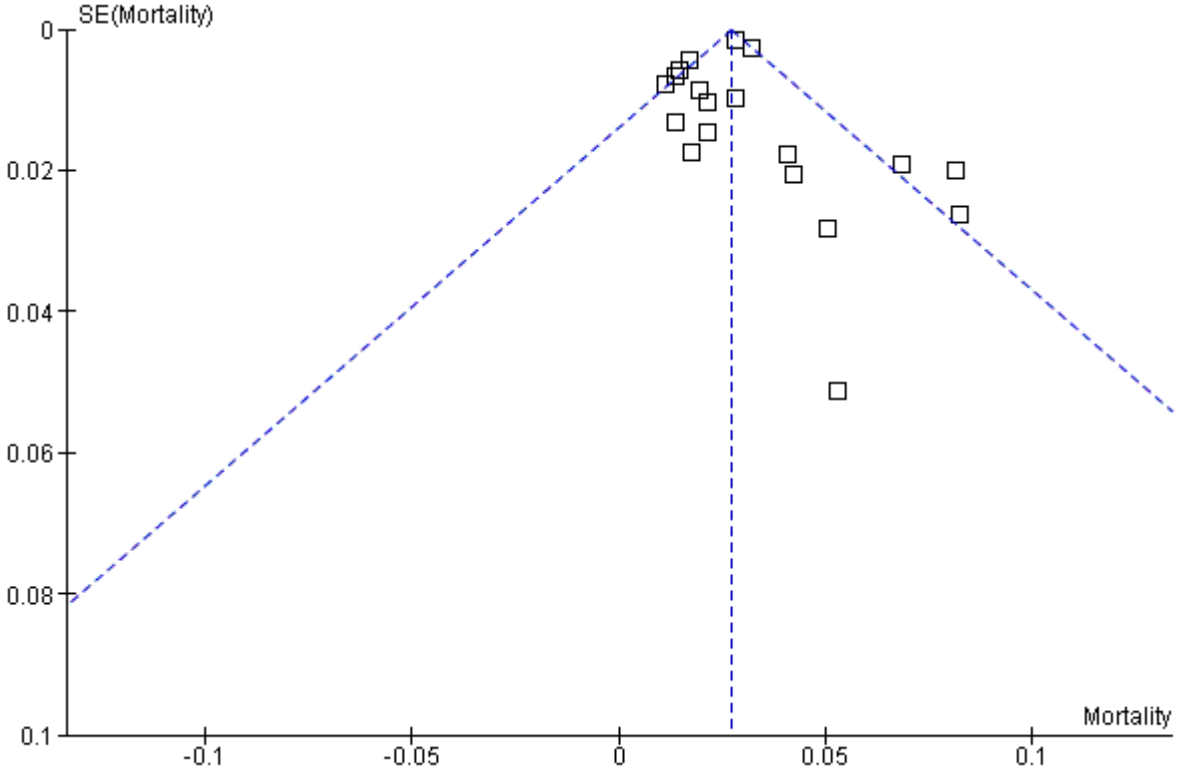
5.1.1. Forest plot of In-hospital Mortality from ASBO

Study or Subgroup	Mortality	SE	ASBO Total	Mortality Total	Weight	Mortality IV, Random, 95% CI
Akgur 1991	0.01104972	0.00777005	181	2	7.1%	0.0110 [-0.0042, 0.0263]
Ambiru 2008	0.01706485	0.00436837	879	15	11.3%	0.0171 [0.0085, 0.0256]
Beyrout 2006	0.01937984	0.00858254	258	5	6.4%	0.0194 [0.0026, 0.0362]
Chopra 2003	0.01333333	0.01324415	75	1	3.5%	0.0133 [-0.0126, 0.0393]
Chou 2005	0.06818182	0.01899956	176	12	1.9%	0.0682 [0.0309, 0.1054]
Cox 1993a	0.04065041	0.01780608	123	5	2.2%	0.0407 [0.0058, 0.0755]
Duron 2008	0.02797203	0.00975031	286	8	5.4%	0.0280 [0.0089, 0.0471]
Lo 2007	0.08108108	0.02006839	185	15	1.7%	0.0811 [0.0417, 0.1204]
Mais 1998	0.04210526	0.02060465	95	4	1.7%	0.0421 [0.0017, 0.0825]
Matter 1997	0.02105263	0.01041492	190	4	5.0%	0.0211 [0.0006, 0.0415]
Menzies 2001	0.08181818	0.02613322	110	9	1.1%	0.0818 [0.0306, 0.1330]
Miller 2000	0.01463415	0.00593049	410	6	9.2%	0.0146 [0.0030, 0.0263]
Nour 1996	0.05263158	0.05122782	19	1	0.3%	0.0526 [-0.0478, 0.1530]
Parikh 2008	0.03183315	0.00260118	4555	145	13.8%	0.0318 [0.0267, 0.0369]
Seror 1993	0.01346801	0.00668851	297	4	8.3%	0.0135 [0.0004, 0.0266]
Shieh 1995	0.01754386	0.01738929	57	1	2.2%	0.0175 [-0.0165, 0.0516]
Shikata 1990	0.02795006	0.00147932	12415	347	14.9%	0.0280 [0.0251, 0.0308]
Sosa 1993	0.02105263	0.01472893	95	2	3.0%	0.0211 [-0.0078, 0.0499]
Veselyi 1997	0.05	0.02813657	60	3	0.9%	0.0500 [-0.0051, 0.1051]
Total (95% CI)			**20466**	**589**	**100.0%**	**0.0249 [0.0193, 0.0304]**

Heterogeneity: Tau² = 0.00; Chi² = 42.72, df = 18 (P = 0.0009); I² = 58%
Test for overall effect: Z = 8.82 (P < 0.00001)



5.1.2. Funnel plot of studies included in analysis of mortality from ASBO



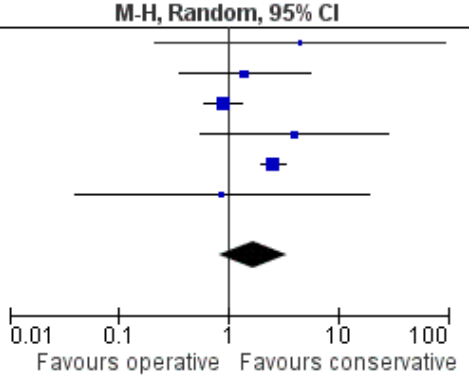
5.2.1. In hospital mortality from ASBO Stratification by anatomical region: Not Applicable

5.2.2. Forest plot of in hospital mortality from ASBO, comparison between operative and conservative treatment

	Operative		Conservative			Odds Ratio	Odds Ratio
Study or Subgroup	**Events**	**Total**	**Events**	**Total**	**Weight**	**M-H, Random, 95% CI**	**M-H, Random, 95% CI**
Akgur 1991	2	96	0	85	4.8%	4.52 [0.21, 95.56]	
Menzies 2001	4	41	5	69	15.3%	1.38 [0.35, 5.48]	
Parikh 2008	33	1126	112	3429	32.0%	0.89 [0.60, 1.33]	
Seror 1993	2	61	2	236	9.5%	3.97 [0.55, 28.74]	
Shikata 1990	116	3462	98	7323	33.7%	2.56 [1.95, 3.35]	
Sosa 1993	0	21	2	95	4.7%	0.87 [0.04, 18.78]	
Total (95% CI)		**4807**		**11237**	**100.0%**	**1.69 [0.83, 3.47]**	
Total events	157		219				

Heterogeneity: Tau² = 0.38; Chi² = 19.83, df = 5 (P = 0.001); I² = 75%

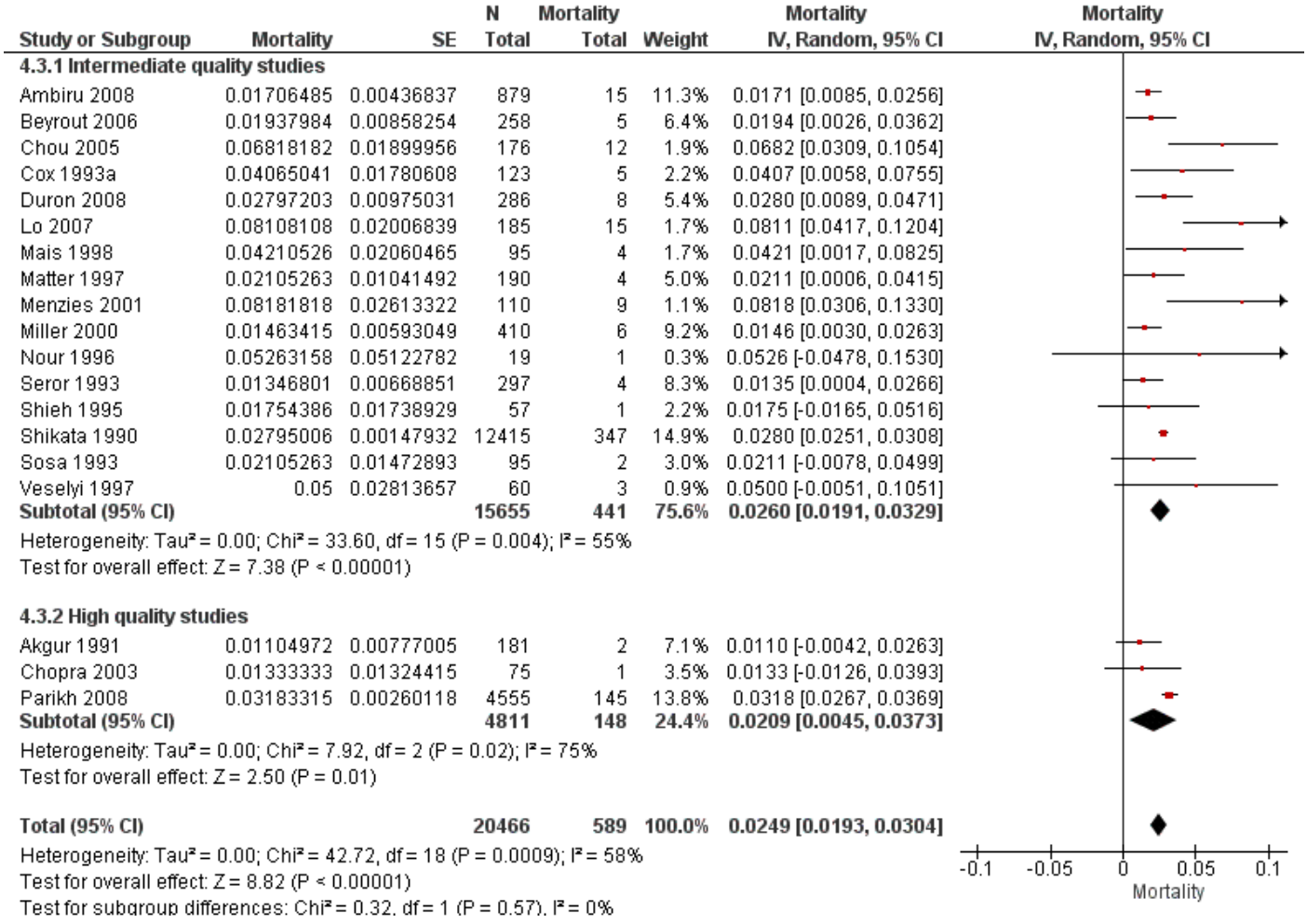
Test for overall effect: Z = 1.44 (P = 0.15)



5.3.1. Sensitivity analysis of in hospital mortality from ASBO, impact of individual studies

Study	Point estimate	95%CI
All studies included	0.0249	0.0193-0.0304
Akgur 1991	0.0258	0.0203-0.0314
Ambiru 2008	0.0258	0.0200-0.0316
Beyrout 2006	0.0253	0.0195-0.0311
Chopra 2003	0.0253	0.0196-0.0309
Chou 2005	0.0240	0.0186-0.0293
Cox 1993a	0.0245	0.0189-0.0301
Duron 2008	0.0247	0.0189-0.0305
Lo 2007	0.0238	0.0187-0.0289
Mais 1998	0.0246	0.0190-0.0302
Matter 1997	0.0251	0.0194-0.0309
Menzies 2001	0.0242	0.0188-0.0295
Miller 2000	0.0258	0.0202-0.0315
Nour 1996	0.0248	0.0192-0.0304
Parikh 2008	0.0242	0.0178-0.0307
Seror 1993	0.0258	0.0202-0.0315
Shieh 1995	0.0251	0.0194-0.0307
Shikata 1990	0.0254	0.0182-0.0325
Sosa 1993	0.0250	0.0193-0.0307
Veselyi 1997	0.0246	0.0191-0.0302

5.4.1. Sensitivity analysis of in Hospital mortality from ASBO, stratification by quality of study

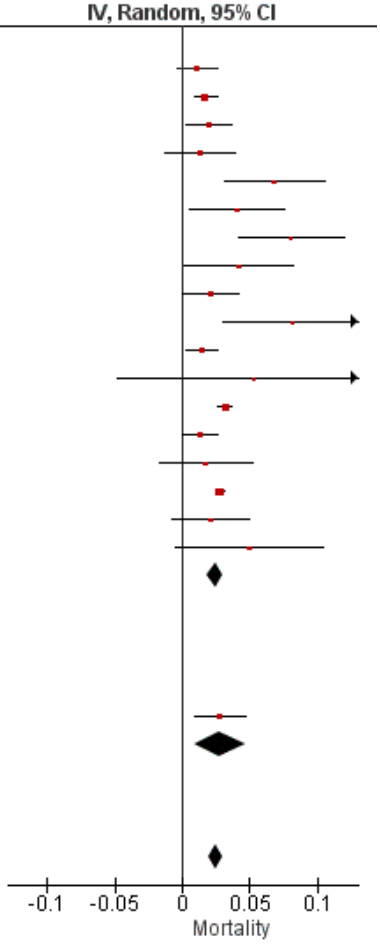


5.4.2. Table Sensitivity analysis of in Hospital mortality from ASBO, impact of quality of studies

Study	Point estimate	95%CI
All available studies	0.0249	0.0193-0.0304
Low Quality studies only	NA	NA
Intermediate Quality studies only	0.0260	0.0191-0.0329
High studies only	0.0209	0.0045-0.0373

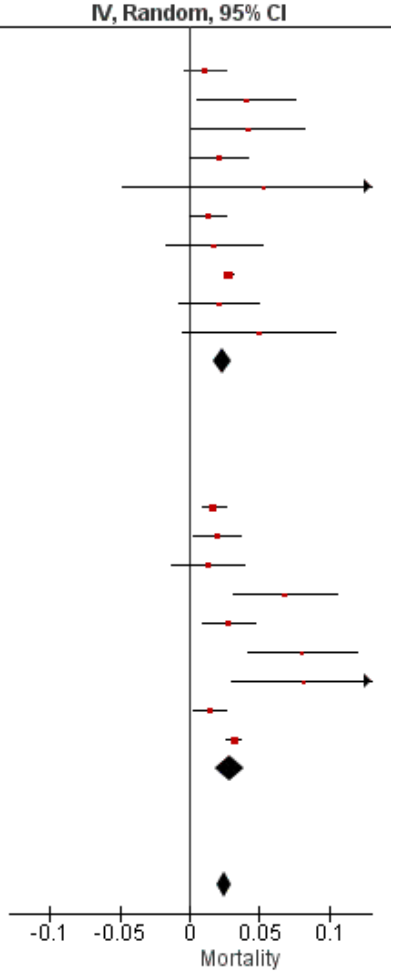
5.5.1. Sensitivity analysis of the In Hospital mortality from ASBO, retrospective vs. prospective

Study or Subgroup	Mortality	SE	ASBO Total	Mortality Total	Weight	Mortality IV, Random, 95% CI
4.4.1 Retrospective						
Akgur 1991	0.01104972	0.00777005	181	2	7.1%	0.0110 [-0.0042, 0.0263]
Ambiru 2008	0.01706485	0.00436837	879	15	11.3%	0.0171 [0.0085, 0.0256]
Beyrout 2006	0.01937984	0.00858254	258	5	6.4%	0.0194 [0.0026, 0.0362]
Chopra 2003	0.01333333	0.01324415	75	1	3.5%	0.0133 [-0.0126, 0.0393]
Chou 2005	0.06818182	0.01899956	176	12	1.9%	0.0682 [0.0309, 0.1054]
Cox 1993a	0.04065041	0.01780608	123	5	2.2%	0.0407 [0.0058, 0.0755]
Lo 2007	0.08108108	0.02006839	185	15	1.7%	0.0811 [0.0417, 0.1204]
Mais 1998	0.04210526	0.02060465	95	4	1.7%	0.0421 [0.0017, 0.0825]
Matter 1997	0.02105263	0.01041492	190	4	5.0%	0.0211 [0.0006, 0.0415]
Menzies 2001	0.08181818	0.02613322	110	9	1.1%	0.0818 [0.0306, 0.1330]
Miller 2000	0.01463415	0.00593049	410	6	9.2%	0.0146 [0.0030, 0.0263]
Nour 1996	0.05263158	0.05122782	19	1	0.3%	0.0526 [-0.0478, 0.1530]
Parikh 2008	0.03183315	0.00260118	4555	145	13.8%	0.0318 [0.0267, 0.0369]
Seror 1993	0.01346801	0.00668851	297	4	8.3%	0.0135 [0.0004, 0.0266]
Shieh 1995	0.01754386	0.01738929	57	1	2.2%	0.0175 [-0.0165, 0.0516]
Shikata 1990	0.02795006	0.00147932	12415	347	14.9%	0.0280 [0.0251, 0.0308]
Sosa 1993	0.02105263	0.01472893	95	2	3.0%	0.0211 [-0.0078, 0.0499]
Veselyi 1997	0.05	0.02813657	60	3	0.9%	0.0500 [-0.0051, 0.1051]
Subtotal (95% CI)			**20180**	**581**	**94.6%**	**0.0247 [0.0189, 0.0305]**
Heterogeneity: Tau² = 0.00; Chi² = 42.71, df = 17 (P = 0.0005); I² = 60%						
Test for overall effect: Z = 8.37 (P < 0.00001)						
4.4.2 Prospective						
Duron 2008	0.02797203	0.00975031	286	8	5.4%	0.0280 [0.0089, 0.0471]
Subtotal (95% CI)			**286**	**8**	**5.4%**	**0.0280 [0.0089, 0.0471]**
Heterogeneity: Not applicable						
Test for overall effect: Z = 2.87 (P = 0.004)						
Total (95% CI)			**20466**	**589**	**100.0%**	**0.0249 [0.0193, 0.0304]**
Heterogeneity: Tau² = 0.00; Chi² = 42.72, df = 18 (P = 0.0009); I² = 58%						
Test for overall effect: Z = 8.82 (P < 0.00001)						
Test for subgroup differences: Chi² = 0.10, df = 1 (P = 0.75), I² = 0%						



5.6.1. Sensitivity analysis of the In Hospital mortality from ASBO, Publication date

Study or Subgroup	Mortality	SE	ASBO Total	Mortality Total	Weight	Mortality IV, Random, 95% CI
4.5.1 Published before the year 2000						
Akgur 1991	0.01104972	0.00777005	181	2	7.1%	0.01 [-0.00, 0.03]
Cox 1993a	0.04065041	0.01780608	123	5	2.2%	0.04 [0.01, 0.08]
Mais 1998	0.04210526	0.02060465	95	4	1.7%	0.04 [0.00, 0.08]
Matter 1997	0.02105263	0.01041492	190	4	5.0%	0.02 [0.00, 0.04]
Nour 1996	0.05263158	0.05122782	19	1	0.3%	0.05 [-0.05, 0.15]
Seror 1993	0.01346801	0.00668851	297	4	8.3%	0.01 [0.00, 0.03]
Shieh 1995	0.01754386	0.01738929	57	1	2.2%	0.02 [-0.02, 0.05]
Shikata 1990	0.02795006	0.00147932	12415	347	14.9%	0.03 [0.03, 0.03]
Sosa 1993	0.02105263	0.01472893	95	2	3.0%	0.02 [-0.01, 0.05]
Veselyi 1997	0.05	0.02813657	60	3	0.9%	0.05 [-0.01, 0.11]
Subtotal (95% CI)			**13532**	**373**	**45.6%**	**0.02 [0.02, 0.03]**
Heterogeneity: Tau² = 0.00; Chi² = 11.52, df = 9 (P = 0.24); I² = 22%						
Test for overall effect: Z = 7.01 (P < 0.00001)						
4.5.2 Published in the year 2000 or later						
Ambiru 2008	0.01706485	0.00436837	879	15	11.3%	0.02 [0.01, 0.03]
Beyrout 2006	0.01937984	0.00858254	258	5	6.4%	0.02 [0.00, 0.04]
Chopra 2003	0.01333333	0.01324415	75	1	3.5%	0.01 [-0.01, 0.04]
Chou 2005	0.06818182	0.01899956	176	12	1.9%	0.07 [0.03, 0.11]
Duron 2008	0.02797203	0.00975031	286	8	5.4%	0.03 [0.01, 0.05]
Lo 2007	0.08108108	0.02006839	185	15	1.7%	0.08 [0.04, 0.12]
Menzies 2001	0.08181818	0.02613322	110	9	1.1%	0.08 [0.03, 0.13]
Miller 2000	0.01463415	0.00593049	410	6	9.2%	0.01 [0.00, 0.03]
Parikh 2008	0.03183315	0.00260118	4555	145	13.8%	0.03 [0.03, 0.04]
Subtotal (95% CI)			**6934**	**216**	**54.4%**	**0.03 [0.02, 0.04]**
Heterogeneity: Tau² = 0.00; Chi² = 31.20, df = 8 (P = 0.0001); I² = 74%						
Test for overall effect: Z = 5.53 (P < 0.00001)						
Total (95% CI)			**20466**	**589**	**100.0%**	**0.02 [0.02, 0.03]**
Heterogeneity: Tau² = 0.00; Chi² = 42.72, df = 18 (P = 0.0009); I² = 58%						
Test for overall effect: Z = 8.82 (P < 0.00001)						
Test for subgroup differences: Chi² = 0.87, df = 1 (P = 0.35), I² = 0%						



6.1.1. Table of qualitative analysis of length of hospital stay for treatment of ASBO
5 studies included in meta-analysis

15 in qualitative analysis qualitative analysis

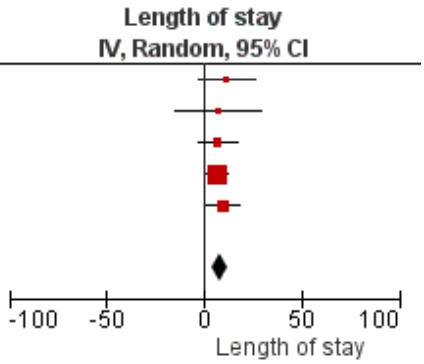
Study	Total group		Conservative treatment		Operatively treated	
	N	LOS (mean ± SD)	N	LOS (mean ± SD)	N	LOS (mean ± SD)
Alwan 1999	332	8 (0 -156) *	-	-	-	-
Beyrout 2006	258	7 (1 – 63) †	-	-	-	-
Borzellino 2004	65	4.4 (1-22) †	-	-	65	4.4 (1-22) †
Kawamura 2010	10	11.4 ± 7.4	7	11.1 ± 8.9	3	12.0 ± 1.7
Khaikin 2007	72	7-13 ‡	-	-	72	7-13 ‡
Kössi 2004	123	7 ± 0.6	-	-	-	-
Menzies 2001	110	10.5 (1-45) †	69	7 (1-23) †	41	16.3(2 - 45) †
Miller 2002	-	-	23	6 (2 – 33) *	7	12 (9 – 17) *
Miller 2000	-	-	267	4 (NA) *	143	12 (NA) *
Parikh 2008	4555	10.6 ± NA	3429	9.5 ± NA	1126	14 ± NA
Rosin 2000	21	6.9 ± 5.1	-	-	21	6.9 ± 5.1
Shih 2003	293	6.5 ± 3.0	220	6.9 ± 2.9	73	5.9 ± 2.8
Sosa 1993	116	13.4 (2 – NA) †	95	13.7 (2 – NA) †	21	12.3 (6 – 48) †
Suzuki 2003	17	9.9 ± 4.4	-	-	-	-
Wang 2009	46	8.8 (6 – 20) †	-	-	-	-

NA not available;
*Median(Range);
† Mean (range), *only used for articles that provided insufficient data to extract Mean and SD or Median and Range*;
‡ Khaikin 2007: median LOS: 7 in 31 patients receiving laparoscopic surgery, 8 in 10 patients after conversion, and 13 in 31 patients receiving open surgery.

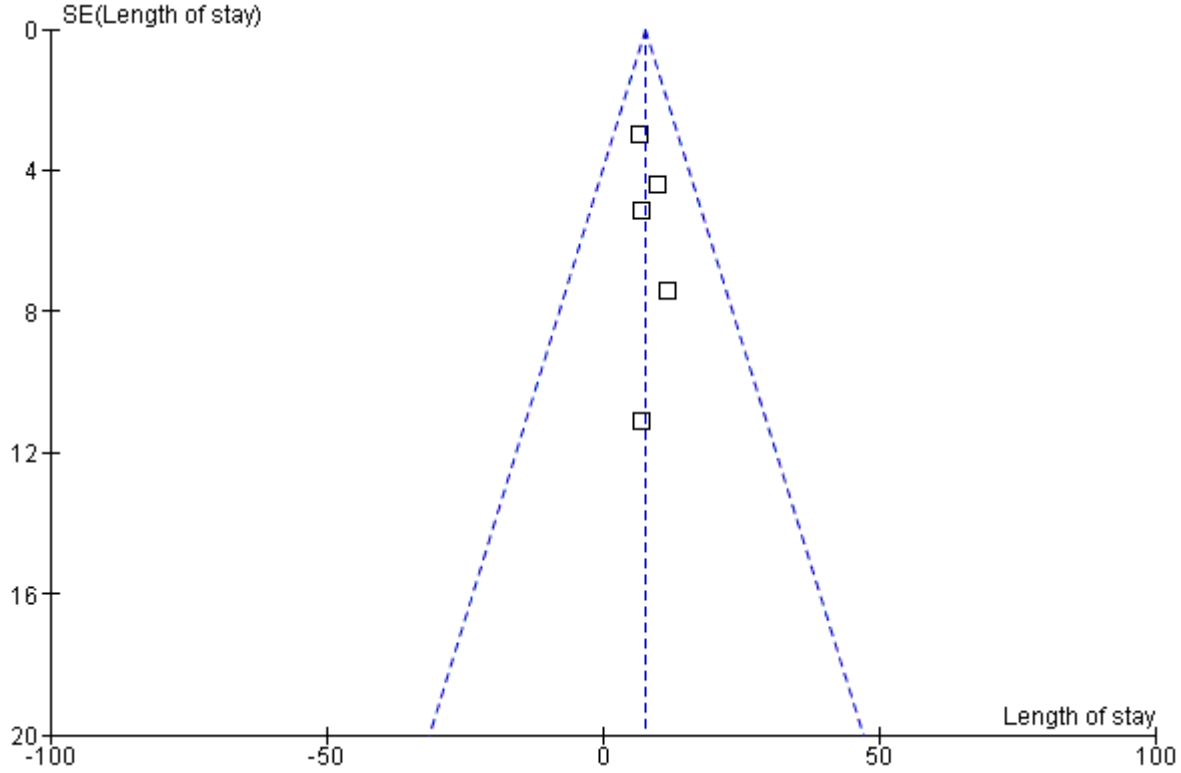
6.1.2. Forest plot of length of hospital stay for treatment of ASBO

Study or Subgroup	Length of stay	SE	N Total	Total	Weight	Length of stay IV, Random, 95% CI
Kawamura 2010	11.4	7.4	10	0	8.0%	11.40 [-3.10, 25.90]
Kössi 2004	7	11.1	123	0	3.6%	7.00 [-14.76, 28.76]
Rosin 2000	6.9	5.1	21	0	16.9%	6.90 [-3.10, 16.90]
Shih 2003	6.5	3	293	0	48.8%	6.50 [0.62, 12.38]
Suzuki 2003	9.9	4.4	17	0	22.7%	9.90 [1.28, 18.52]
Total (95% CI)			**464**	**0**	**100.0%**	**7.75 [3.64, 11.86]**

Heterogeneity: Tau² = 0.00; Chi² = 0.69, df = 4 (P = 0.95); I² = 0%
Test for overall effect: Z = 3.70 (P = 0.0002)



6.1.3. Funnel plot of studies included in quantitative analysis of length of hospital stay for ASBO



6.2.1. Length of hospital stay for ASBO, by anatomical location: Not applicable

6.3.1. Length of hospital stay for ASBO, by surgical technique: Not applicable

6.4.1. Sensitivity Analysis of Length of hospital stay for ASBO, impact of individual studies

Study	Point estimate	95% CI
All studies included	7.06	5.92-8.19
Kawamura 2010	7.03	5.89-8.17
Kössi 2004	7.78*	3.59-11.96
Rosin 2000	7.06	5.92-8.20
Shih 2003	7.08	5.92-8.23
Suzuki 2003	7.01	5.87-8.15

*>10% impact on point estimate

6.5.1. Sensitivity Analysis of Length of hospital stay for ASBO, impact of quality of studies:
Not applicable, All studies in quantitative analysis have intermediate quality

6.6.1. Sensitivity Analysis of Length of hospital stay for ASBO, impact of study design:
Not applicable, All studies in quantitative analysis retrospective

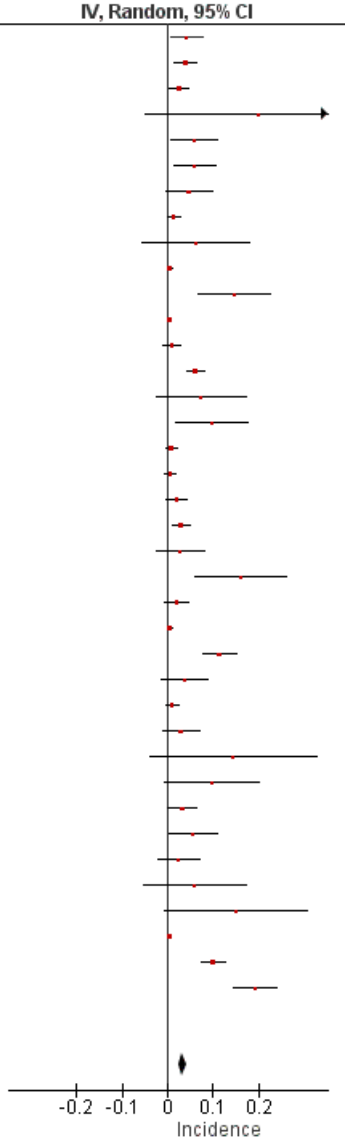
6.7.1. Sensitivity Analysis for Length of hospital stay for ASBO, impact of date of publication:
Not applicable, All studies in quantitative analysis published in the year 2000 or later

7.1.1. Forest plot of the incidence of enterotomy, including all studies

Study or Subgroup	Incidence	SE	Reoperations Total	Enterotomy Total	Weight	Incidence IV, Random, 95% CI
Akgur 1991	0.04166667	0.01824156	120	5	2.5%	0.0417 [0.0059, 0.0774]
Alwan 1999	0.03952569	0.01224961	253	10	3.6%	0.0395 [0.0155, 0.0635]
Baccari 2009	0.025	0.0110397	200	5	3.9%	0.0250 [0.0034, 0.0466]
Baghai 2009	0.2	0.12649111	10	2	0.1%	0.2000 [-0.0479, 0.4479]
Becmeur 1998	0.05813953	0.02523364	86	5	1.7%	0.0581 [0.0087, 0.1076]
Ben-Haim 2002	0.06	0.02374868	100	6	1.8%	0.0600 [0.0135, 0.1065]
Borzellino 2004	0.04615385	0.02602474	65	3	1.6%	0.0462 [-0.0049, 0.0972]
Bouasker 2010	0.01287554	0.00738568	233	3	4.7%	0.0129 [-0.0016, 0.0274]
Boukerrou 2001	0.0625	0.06051536	16	1	0.4%	0.0625 [-0.0561, 0.1811]
Burcos 2002	0.00442478	0.00312186	452	2	5.4%	0.0044 [-0.0017, 0.0105]
Chopra 2003	0.14666667	0.04085022	75	11	0.8%	0.1467 [0.0666, 0.2267]
Ercan 2009	0.00295421	0.00208585	677	2	5.5%	0.0030 [-0.0011, 0.0070]
Ferrari 2008	0.01	0.00994987	100	1	4.1%	0.0100 [-0.0095, 0.0295]
Fevang 2004	0.06039076	0.01003933	563	34	4.1%	0.0604 [0.0407, 0.0801]
Finan 1997	0.07407407	0.05040102	27	2	0.5%	0.0741 [-0.0247, 0.1729]
Francois 1994	0.09615385	0.0408817	52	5	0.8%	0.0962 [0.0160, 0.1763]
Freys 1994	0.00833333	0.00586795	240	2	5.0%	0.0083 [-0.0032, 0.0198]
Fuchs 1992	0.00588235	0.00586503	170	1	5.0%	0.0059 [-0.0056, 0.0174]
Husain 2001	0.02	0.01143095	150	3	3.8%	0.0200 [-0.0024, 0.0424]
Johanet 1999	0.02898551	0.01009831	276	8	4.1%	0.0290 [0.0092, 0.0488]
Kawamura 2009	0.02777778	0.02738926	36	1	1.5%	0.0278 [-0.0259, 0.0815]
Keck 1994	0.16	0.05184593	50	8	0.5%	0.1600 [0.0584, 0.2616]
Kirshtein 2002	0.01941748	0.01359627	103	2	3.4%	0.0194 [-0.0072, 0.0461]
Kolmorgen 1998	0.00506971	0.00252842	789	4	5.5%	0.0051 [0.0001, 0.0100]
Kumakiri 2010	0.11400651	0.0181389	307	35	2.6%	0.1140 [0.0785, 0.1496]
Kyzer 1999	0.03773585	0.02617498	53	2	1.6%	0.0377 [-0.0136, 0.0890]
LeBlanc 2003	0.01	0.00703562	200	2	4.8%	0.0100 [-0.0038, 0.0238]
Naguib 2012	0.02941176	0.02048913	68	2	2.2%	0.0294 [-0.0107, 0.0696]
Oliveira 1997	0.14285714	0.09352195	14	2	0.2%	0.1429 [-0.0404, 0.3262]
Parent 1995	0.09677419	0.05310032	31	3	0.5%	0.0968 [-0.0073, 0.2008]
Perrone 2005	0.03305785	0.01625342	121	4	2.9%	0.0331 [0.0012, 0.0649]
Petersen 2009	0.05633803	0.02736402	71	4	1.5%	0.0563 [0.0027, 0.1100]
Petros 2011	0.02439024	0.02409097	41	1	1.8%	0.0244 [-0.0228, 0.0716]
Sato 2001	0.05882353	0.05706721	17	1	0.4%	0.0588 [-0.0530, 0.1707]
Shayani 2002	0.15	0.0798436	20	3	0.2%	0.1500 [-0.0065, 0.3065]
Siddiqui 2010	0.00285987	0.00164878	1049	3	5.6%	0.0029 [-0.0004, 0.0061]
Ten Broek 2012	0.09960159	0.01336591	502	50	3.4%	0.0996 [0.0734, 0.1258]
Van Der Krabben 2000	0.19259259	0.02399851	270	52	1.8%	0.1926 [0.1456, 0.2396]
Varnell 2008	0.0212766	0.02104903	47	1	0.0%	0.0213 [-0.0200, 0.0625]
Total (95% CI)			**7607**	**290**	**100.0%**	**0.0331 [0.0254, 0.0407]**

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 262.98$, df = 37 ($P < 0.00001$); $I^2 = 86\%$

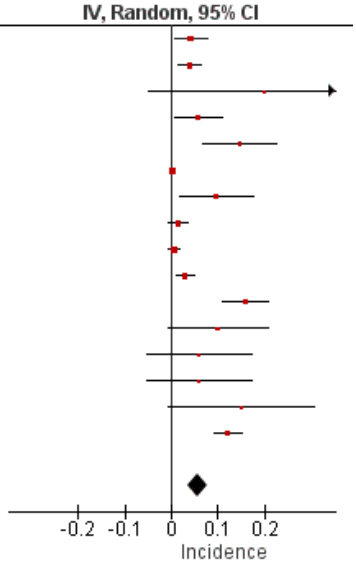
Test for overall effect: $Z = 8.43$ ($P < 0.00001$)



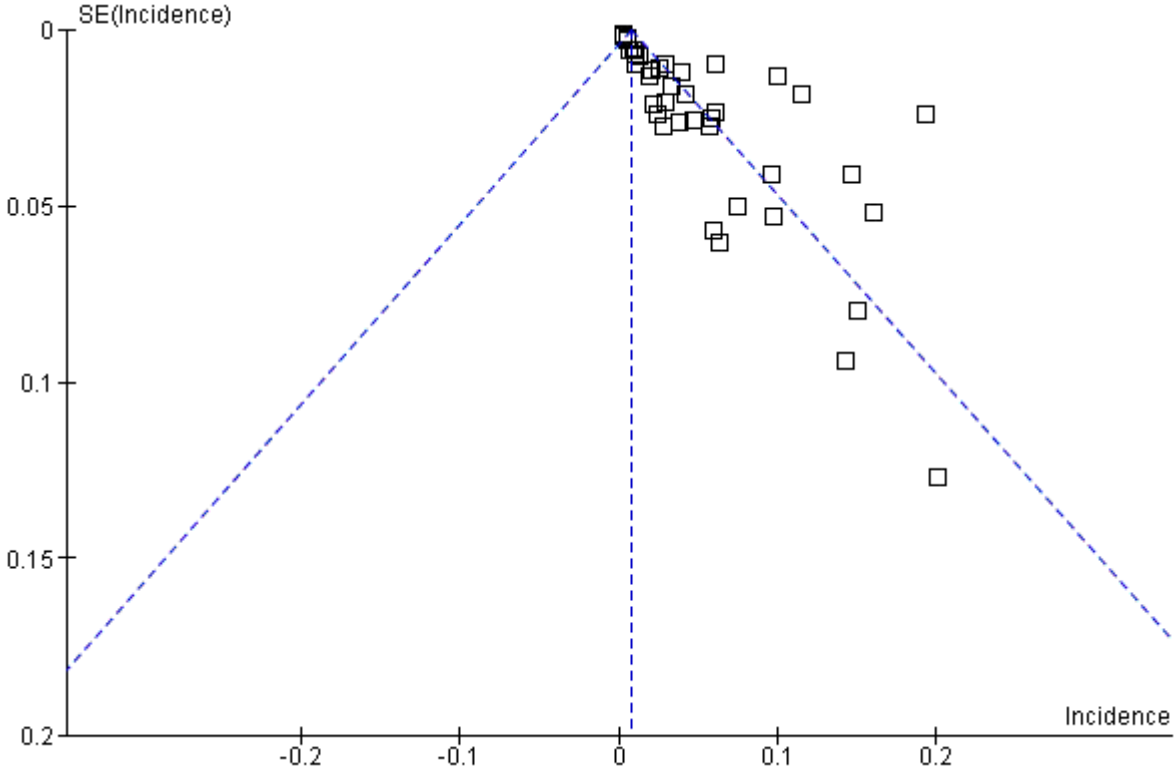
7.1.2. Forest plot of the incidence of enterotomy during reoperations with adhesiolysis

Study or Subgroup	Incidence	SE	Reoperations Total	Enterotomy Total	Weight	Incidence IV, Random, 95% CI
Akgur 1991	0.04166667	0.01824156	120	5	8.3%	0.0417 [0.0059, 0.0774]
Alwan 1999	0.03952569	0.01224961	253	10	9.5%	0.0395 [0.0155, 0.0635]
Baghai 2009	0.2	0.12649111	10	2	0.7%	0.2000 [-0.0479, 0.4479]
Becmeur 1998	0.05813953	0.02523364	86	5	6.8%	0.0581 [0.0087, 0.1076]
Chopra 2003	0.14666667	0.04085022	75	11	4.2%	0.1467 [0.0666, 0.2267]
Ercan 2009	0.00295421	0.00208585	677	2	10.8%	0.0030 [-0.0011, 0.0070]
Francois 1994	0.09615385	0.0408817	52	5	4.2%	0.0962 [0.0160, 0.1763]
Freys 1994	0.01538462	0.01079456	130	2	9.8%	0.0154 [-0.0058, 0.0365]
Fuchs 1992	0.00588235	0.00586503	170	1	10.5%	0.0059 [-0.0056, 0.0174]
Johanet 1999	0.02898551	0.01009831	276	8	9.9%	0.0290 [0.0092, 0.0488]
Kumakiri 2010	0.15909091	0.02465959	220	35	6.9%	0.1591 [0.1108, 0.2074]
Parent 1995	0.1	0.05477226	30	3	2.8%	0.1000 [-0.0074, 0.2074]
Petros 2011	0.05882353	0.05706721	17	1	2.7%	0.0588 [-0.0530, 0.1707]
Sato 2001	0.05882353	0.05706721	17	1	2.7%	0.0588 [-0.0530, 0.1707]
Shayani 2002	0.15	0.0798436	20	3	1.6%	0.1500 [-0.0065, 0.3065]
Ten Broek 2012	0.12135922	0.01608768	412	50	8.7%	0.1214 [0.0898, 0.1529]
Total (95% CI)			**2565**	**144**	**100.0%**	**0.0580 [0.0369, 0.0791]**

Heterogeneity: Tau² = 0.00; Chi² = 137.56, df = 15 (P < 0.00001); I² = 89%
Test for overall effect: Z = 5.39 (P < 0.00001)

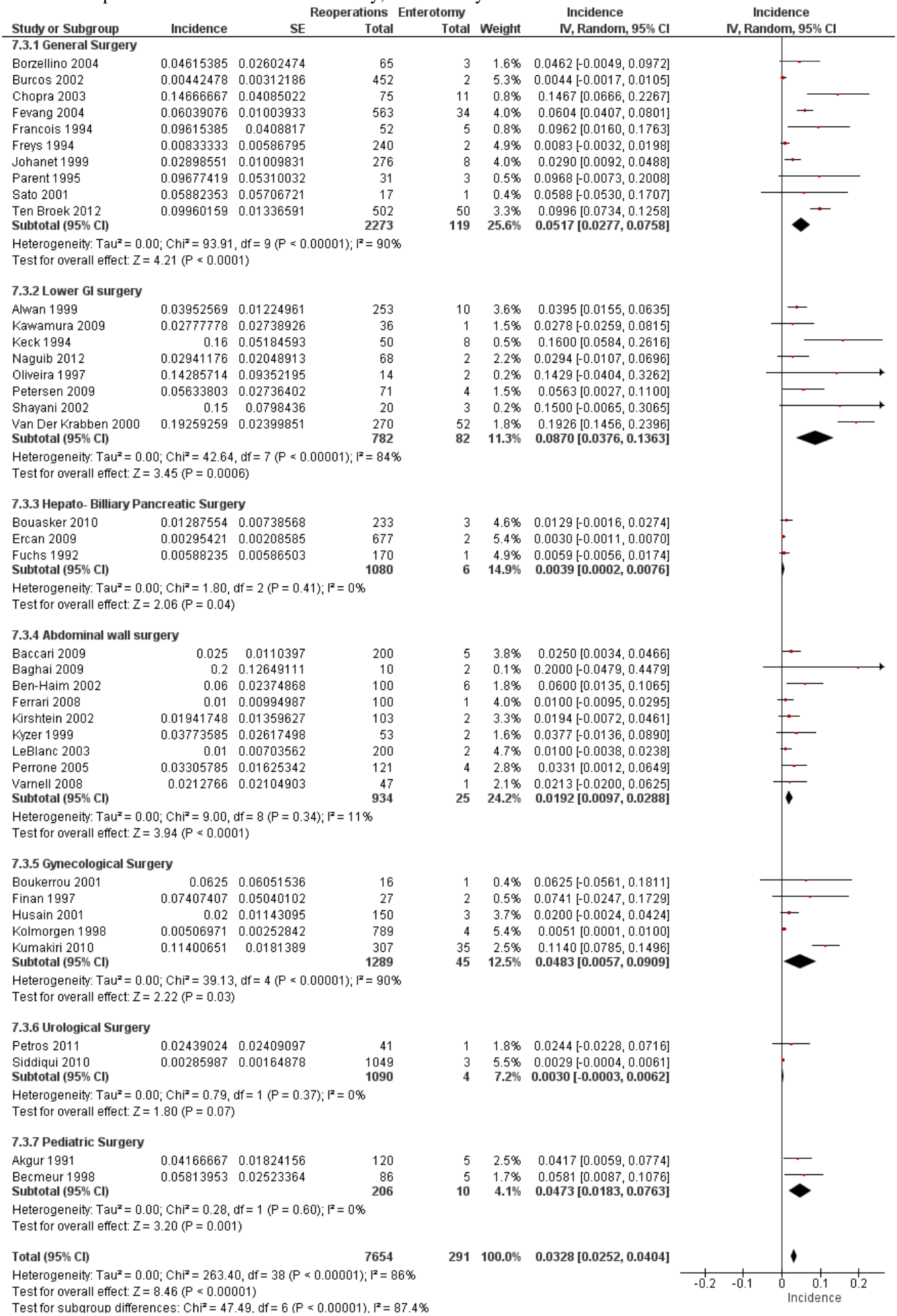


7.1.3. Funnel plot of studies included in analysis of enterotomy



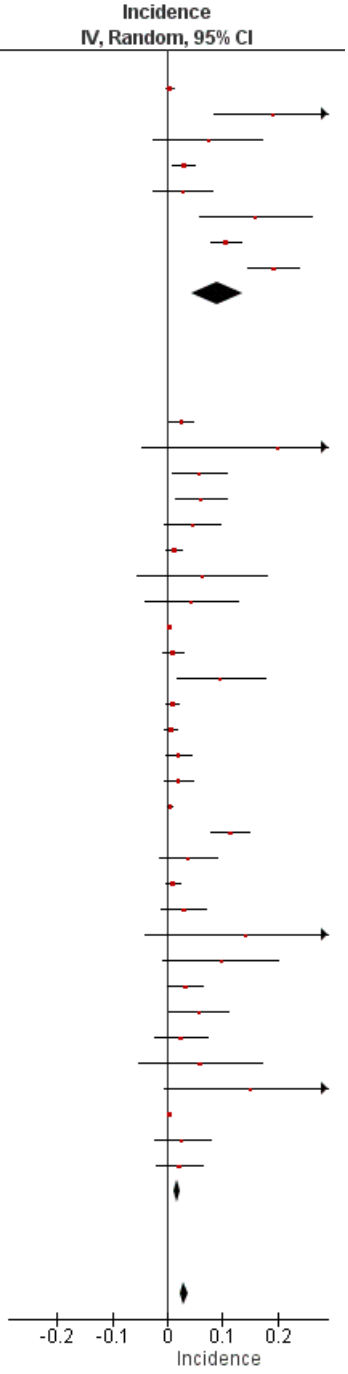
7.2.1. Best and worst case scenario for the incidence of enterotomy:
Not applicable, no loss to follow-up for this outcome

7.3.1. Forest plot of the incidence of enterotomy, stratified by anatomical location



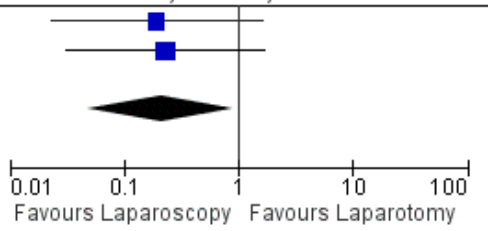
7.4.1. Forest plot of the incidence of enterotomy, stratified by surgical technique
3 studies excluded. Surgical technique not specified in 3 studies.

Study or Subgroup	Incidence	SE	Reoperations Total	Enterotomy Total	Weight	Incidence IV, Random, 95% CI
7.4.1 Laparotomy						
Burcos 2002	0.00442478	0.00312186	452	2	6.1%	0.0044 [-0.0017, 0.0105]
Chopra 2003	0.19230769	0.05465371	52	10	0.5%	0.1923 [0.0852, 0.2994]
Finan 1997	0.07407407	0.05040102	27	2	0.5%	0.0741 [-0.0247, 0.1729]
Johanet 1999	0.02898551	0.01009831	276	8	4.4%	0.0290 [0.0092, 0.0488]
Kawamura 2009	0.02777778	0.02738926	36	1	1.5%	0.0278 [-0.0259, 0.0815]
Keck 1994	0.16	0.05184593	50	8	0.5%	0.1600 [0.0584, 0.2616]
Ten Broek 2012	0.10560345	0.01426741	464	49	3.4%	0.1056 [0.0776, 0.1336]
Van Der Krabben 2000	0.19259259	0.02399851	270	52	1.8%	0.1926 [0.1456, 0.2396]
Subtotal (95% CI)			**1627**	**132**	**18.7%**	**0.0890 [0.0422, 0.1357]**
Heterogeneity: Tau² = 0.00; Chi² = 128.41, df = 7 (P < 0.00001); I² = 95%						
Test for overall effect: Z = 3.73 (P = 0.0002)						
7.4.2 Laparoscopy						
Baccari 2009	0.025	0.0110397	200	5	4.2%	0.0250 [0.0034, 0.0466]
Baghai 2009	0.2	0.12649111	10	2	0.1%	0.2000 [-0.0479, 0.4479]
Becmeur 1998	0.05813953	0.02523364	86	5	1.7%	0.0581 [0.0087, 0.1076]
Ben-Haim 2002	0.06	0.02374868	100	6	1.9%	0.0600 [0.0135, 0.1065]
Borzellino 2004	0.04615385	0.02602474	65	3	1.6%	0.0462 [-0.0049, 0.0972]
Bouasker 2010	0.01287554	0.00738568	233	3	5.1%	0.0129 [-0.0016, 0.0274]
Boukerrou 2001	0.0625	0.06051536	16	1	0.4%	0.0625 [-0.0561, 0.1811]
Chopra 2003	0.04347826	0.04252258	23	1	0.7%	0.0435 [-0.0399, 0.1268]
Ercan 2009	0.00295421	0.00208585	677	2	6.2%	0.0030 [-0.0011, 0.0070]
Ferrari 2008	0.01	0.00994987	100	1	4.4%	0.0100 [-0.0095, 0.0295]
Francois 1994	0.09615385	0.0408817	52	5	0.8%	0.0962 [0.0160, 0.1763]
Freys 1994	0.00833333	0.00586795	240	2	5.5%	0.0083 [-0.0032, 0.0198]
Fuchs 1992	0.00588235	0.00586503	170	1	5.5%	0.0059 [-0.0056, 0.0174]
Husain 2001	0.02	0.01143095	150	3	4.1%	0.0200 [-0.0024, 0.0424]
Kirshtein 2002	0.01941748	0.01359627	103	2	3.5%	0.0194 [-0.0072, 0.0461]
Kolmorgen 1998	0.00506971	0.00252842	789	4	6.2%	0.0051 [0.0001, 0.0100]
Kumakiri 2010	0.11400651	0.0181389	307	35	2.6%	0.1140 [0.0785, 0.1496]
Kyzer 1999	0.03773585	0.02617498	53	2	1.6%	0.0377 [-0.0136, 0.0890]
LeBlanc 2003	0.01	0.00703562	200	2	5.2%	0.0100 [-0.0038, 0.0238]
Naguib 2012	0.02941176	0.02048913	68	2	2.3%	0.0294 [-0.0107, 0.0696]
Oliveira 1997	0.14285714	0.09352195	14	2	0.2%	0.1429 [-0.0404, 0.3262]
Parent 1995	0.09677419	0.05310032	31	3	0.5%	0.0968 [-0.0073, 0.2008]
Perrone 2005	0.03305785	0.01625342	121	4	3.0%	0.0331 [0.0012, 0.0649]
Petersen 2009	0.05633803	0.02736402	71	4	1.5%	0.0563 [0.0027, 0.1100]
Petros 2011	0.02439024	0.02409097	41	1	1.8%	0.0244 [-0.0228, 0.0716]
Sato 2001	0.05882353	0.05706721	17	1	0.4%	0.0588 [-0.0530, 0.1707]
Shayani 2002	0.15	0.0798436	20	3	0.2%	0.1500 [-0.0065, 0.3065]
Siddiqui 2010	0.00285987	0.00164878	1049	3	6.3%	0.0029 [-0.0004, 0.0061]
Ten Broek 2012	0.02631579	0.02596722	38	1	1.6%	0.0263 [-0.0246, 0.0772]
Varnell 2008	0.0212766	0.02104903	47	1	2.2%	0.0213 [-0.0200, 0.0625]
Subtotal (95% CI)			**5091**	**110**	**81.3%**	**0.0178 [0.0116, 0.0239]**
Heterogeneity: Tau² = 0.00; Chi² = 88.75, df = 29 (P < 0.00001); I² = 67%						
Test for overall effect: Z = 5.67 (P < 0.00001)						
Total (95% CI)			**6718**	**242**	**100.0%**	**0.0298 [0.0223, 0.0374]**
Heterogeneity: Tau² = 0.00; Chi² = 225.68, df = 37 (P < 0.00001); I² = 84%						
Test for overall effect: Z = 7.76 (P < 0.00001)						
Test for subgroup differences: Chi² = 8.75, df = 1 (P = 0.003), I² = 88.6%						



7.4.2. Forest plot for the incidence of enterotomy compared between laparoscopy and laparotomy

Study or Subgroup	Laparoscopy Events	Laparoscopy Total	Laparotomy Events	Laparotomy Total	Weight	Odds Ratio M-H, Random, 95% CI
Chopra 2003	1	23	10	52	47.3%	0.19 [0.02, 1.59]
Ten Broek 2012	1	38	49	464	52.7%	0.23 [0.03, 1.71]
Total (95% CI)		**61**		**516**	**100.0%**	**0.21 [0.05, 0.90]**
Total events	2		59			
Heterogeneity: Tau² = 0.00; Chi² = 0.01, df = 1 (P = 0.90); I² = 0%						
Test for overall effect: Z = 2.10 (P = 0.04)						

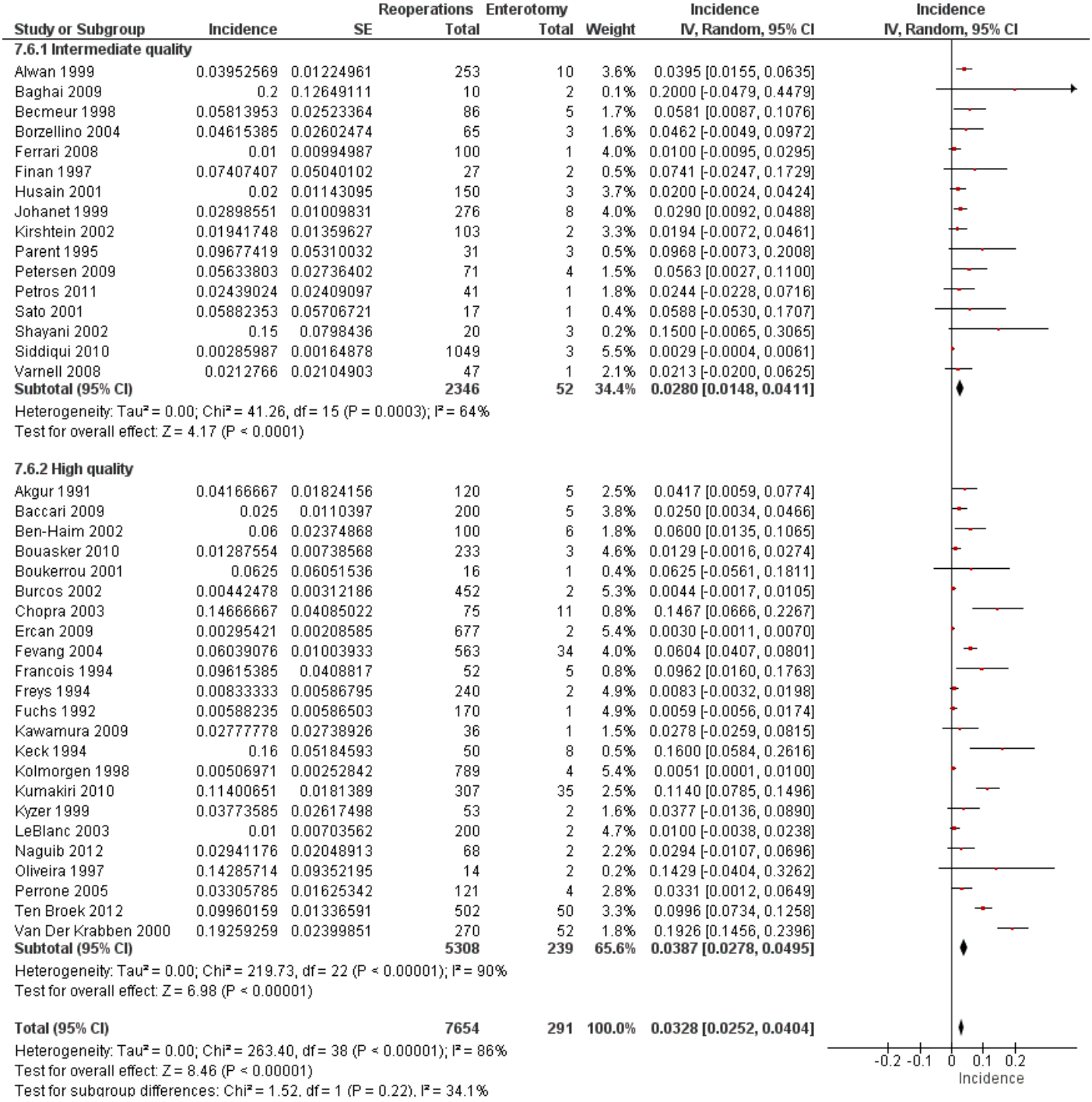


7.5.1. Sensitivity analysis of the incidence of enterotomy, impact of individual studies

Study	Point estimate	95%CI
All studies included	0.0328	0.0252-0.0404
Akgur 1991	0.0325	0.0248-0.0402
Alwan 1999	0.0324	0.0247-0.0401
Baccari 2009	0.0331	0.0254-0.0409
Baghai 2009	0.0326	0.0250-0.0402
Becmeur 1998	0.0323	0.0246-0.0399
Ben-Haim 2002	0.0322	0.0246-0.0398
Borzellino 2004	0.0325	0.0249-0.0402
Bouasker 2010	0.0339	0.0261-0.0418
Boukerrou 2001	0.0327	0.0251-0.0403
Burcos 2002	0.0353	0.0272-0.0435
Chopra 2003	0.0316	0.0241-0.0391
Ercan 2009	0.0364	0.0278-0.0450
Ferrari 2008	0.0339	0.0261-0.0417
Fevang 2004	0.0308	0.0233-0.0383
Finan 1997	0.0325	0.0249-0.0401
Francois 1994	0.0322	0.0246-0.0397
Freys 1994	0.0343	0.0264-0.0422
Fuchs 1992	0.0345	0.0266-0.0424
Husain 2001	0.0333	0.0256-0.0411
Johanet 1999	0.0329	0.0252-0.0407
Kawamura 2009	0.0329	0.0252-0.0405
Keck 1994	0.0319	0.0244-0.0394
Kirshtein 2002	0.0333	0.0255-0.0410
Kolmorgen 1998	0.0358	0.0274-0.0442
Kumakiri 2010	0.0297	0.0224-0.0370
Kyzer 1999	0.0327	0.0250-0.0403
LeBlanc 2003	0.0341	0.0263-0.0420
Naguib 2012	0.0329	0.0252-0.0405
Oliveira 1997	0.0326	0.0250-0.0401
Parent 1995	0.0324	0.0248-0.0400
Perrone 2005	0.0328	0.0251-0.0404
Petersen 2009	0.0324	0.0247-0.0400
Petros 2011	0.0330	0.0253-0.0406
Sato 2001	0.0327	0.0251-0.0403
Shayani 2002	0.0324	0.0249-0.0400
Siddiqui 2010	0.0369	0.0281-0.0457
Ten Broek 2012	0.0289*	0.0218-0.0361
Van Der Krabben 2000	0.0281*	0.0212-0.0351
Varnell 2008	0.0331	0.0254-0.0407

*>10% impact on point esitmate

7.6.1. Sensitivity analysis of the incidence of enterotomy, stratified by quality of study

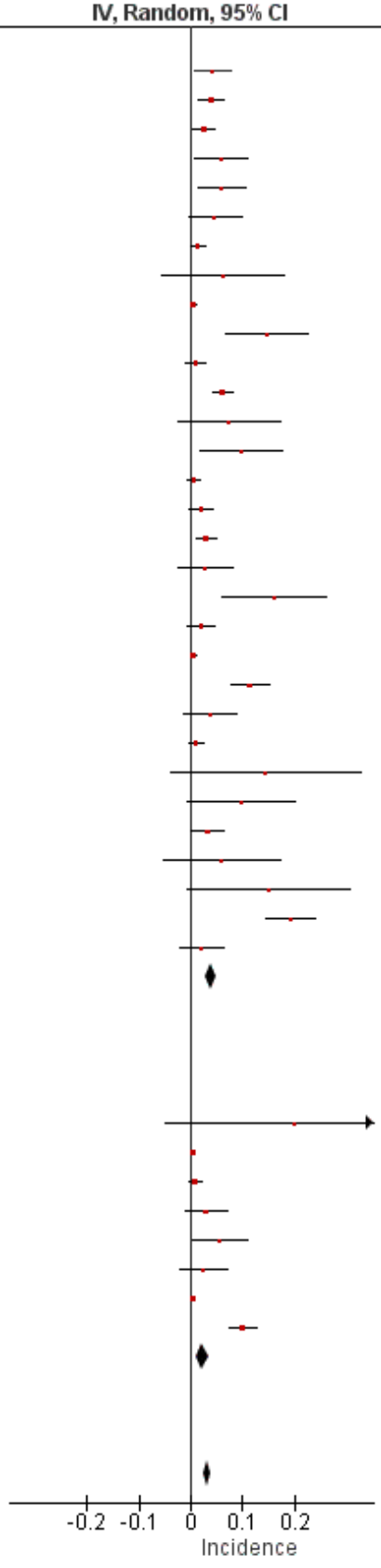


7.6.2. Table of sensitivity analysis of the incidence of enterotomy, impact of quality of studies

Study	Point estimate	95%CI
All available studies	0.0328	0.0252-0.0404
Low Quality studies only	NA	NA
Intermediate Quality studies only	0.0280	0.0148-0.0411
High studies only	0.0387	0.0278-0.0495

7.7.1. Sensitivity analysis of the incidence of enterotomy, stratified by study design

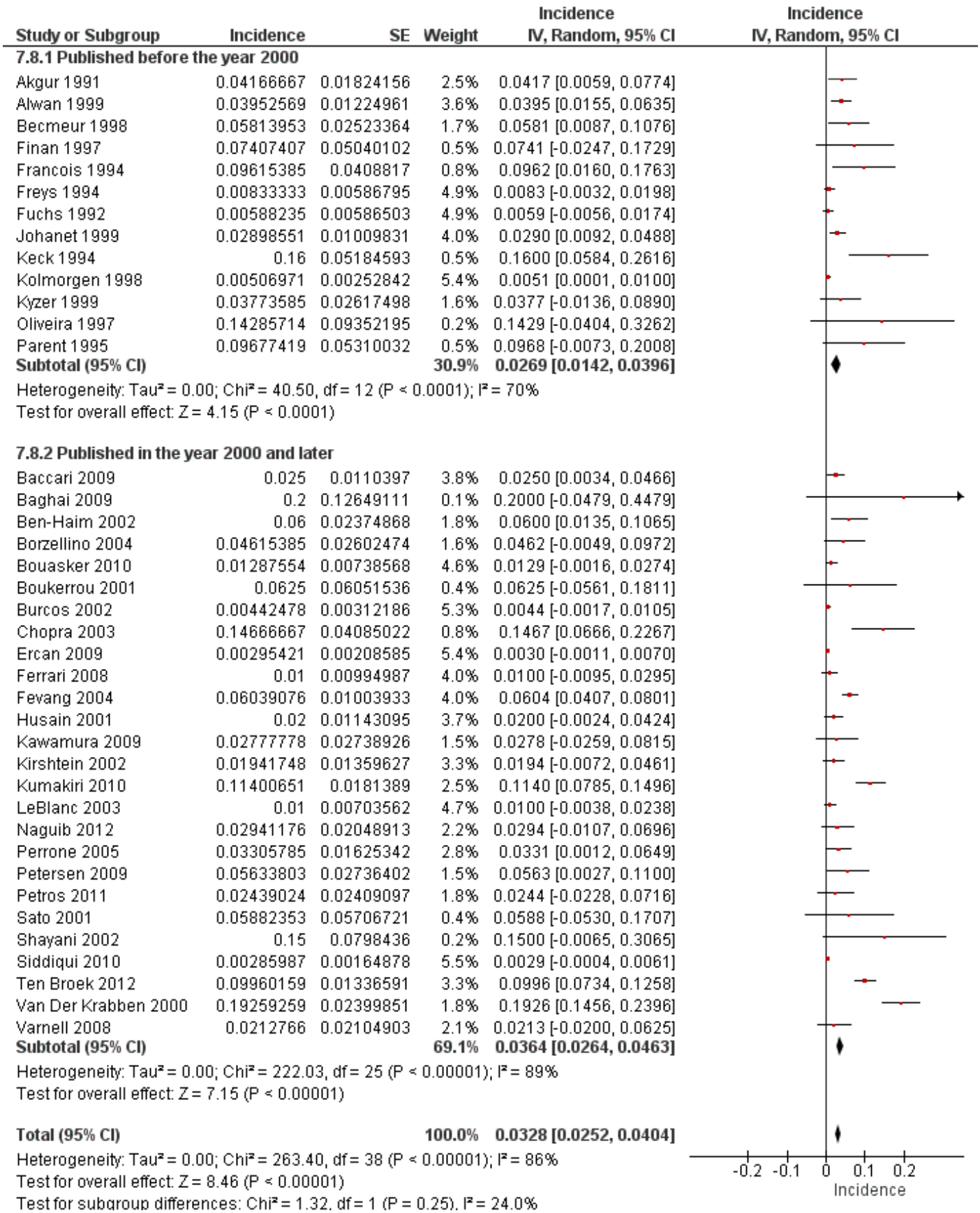
Study or Subgroup	Incidence	SE	Weight	Incidence IV, Random, 95% CI
7.7.1 Retrospective				
Akgur 1991	0.04166667	0.01824156	2.5%	0.0417 [0.0059, 0.0774]
Alwan 1999	0.03952569	0.01224961	3.6%	0.0395 [0.0155, 0.0635]
Baccari 2009	0.025	0.0110397	3.8%	0.0250 [0.0034, 0.0466]
Becmeur 1998	0.05813953	0.02523364	1.7%	0.0581 [0.0087, 0.1076]
Ben-Haim 2002	0.06	0.02374868	1.8%	0.0600 [0.0135, 0.1065]
Borzellino 2004	0.04615385	0.02602474	1.6%	0.0462 [-0.0049, 0.0972]
Bouasker 2010	0.01287554	0.00738568	4.6%	0.0129 [-0.0016, 0.0274]
Boukerrou 2001	0.0625	0.06051536	0.4%	0.0625 [-0.0561, 0.1811]
Burcos 2002	0.00442478	0.00312186	5.3%	0.0044 [-0.0017, 0.0105]
Chopra 2003	0.14666667	0.04085022	0.8%	0.1467 [0.0666, 0.2267]
Ferrari 2008	0.01	0.00994987	4.0%	0.0100 [-0.0095, 0.0295]
Fevang 2004	0.06039076	0.01003933	4.0%	0.0604 [0.0407, 0.0801]
Finan 1997	0.07407407	0.05040102	0.5%	0.0741 [-0.0247, 0.1729]
Francois 1994	0.09615385	0.0408817	0.8%	0.0962 [0.0160, 0.1763]
Fuchs 1992	0.00588235	0.00586503	4.9%	0.0059 [-0.0056, 0.0174]
Husain 2001	0.02	0.01143095	3.7%	0.0200 [-0.0024, 0.0424]
Johanet 1999	0.02898551	0.01009831	4.0%	0.0290 [0.0092, 0.0488]
Kawamura 2009	0.02777778	0.02738926	1.5%	0.0278 [-0.0259, 0.0815]
Keck 1994	0.16	0.05184593	0.5%	0.1600 [0.0584, 0.2616]
Kirshtein 2002	0.01941748	0.01359627	3.3%	0.0194 [-0.0072, 0.0461]
Kolmorgen 1998	0.00506971	0.00252842	5.4%	0.0051 [0.0001, 0.0100]
Kumakiri 2010	0.11400651	0.0181389	2.5%	0.1140 [0.0785, 0.1496]
Kyzer 1999	0.03773585	0.02617498	1.6%	0.0377 [-0.0136, 0.0890]
LeBlanc 2003	0.01	0.00703562	4.7%	0.0100 [-0.0038, 0.0238]
Oliveira 1997	0.14285714	0.09352195	0.2%	0.1429 [-0.0404, 0.3262]
Parent 1995	0.09677419	0.05310032	0.5%	0.0968 [-0.0073, 0.2008]
Perrone 2005	0.03305785	0.01625342	2.8%	0.0331 [0.0012, 0.0649]
Sato 2001	0.05882353	0.05706721	0.4%	0.0588 [-0.0530, 0.1707]
Shayani 2002	0.15	0.0798436	0.2%	0.1500 [-0.0065, 0.3065]
Van Der Krabben 2000	0.19259259	0.02399851	1.8%	0.1926 [0.1456, 0.2396]
Varnell 2008	0.0212766	0.02104903	2.1%	0.0213 [-0.0200, 0.0625]
Subtotal (95% CI)			**75.4%**	**0.0393 [0.0287, 0.0499]**
Heterogeneity: Tau² = 0.00; Chi² = 184.48, df = 30 (P < 0.00001); I² = 84%				
Test for overall effect: Z = 7.24 (P < 0.00001)				
7.7.3 Prospective				
Baghai 2009	0.2	0.12649111	0.1%	0.2000 [-0.0479, 0.4479]
Ercan 2009	0.00295421	0.00208585	5.4%	0.0030 [-0.0011, 0.0070]
Freys 1994	0.00833333	0.00586795	4.9%	0.0083 [-0.0032, 0.0198]
Naguib 2012	0.02941176	0.02048913	2.2%	0.0294 [-0.0107, 0.0696]
Petersen 2009	0.05633803	0.02736402	1.5%	0.0563 [0.0027, 0.1100]
Petros 2011	0.02439024	0.02409097	1.8%	0.0244 [-0.0228, 0.0716]
Siddiqui 2010	0.00285987	0.00164878	5.5%	0.0029 [-0.0004, 0.0061]
Ten Broek 2012	0.09960159	0.01336591	3.3%	0.0996 [0.0734, 0.1258]
Subtotal (95% CI)			**24.6%**	**0.0215 [0.0091, 0.0339]**
Heterogeneity: Tau² = 0.00; Chi² = 60.70, df = 7 (P < 0.00001); I² = 88%				
Test for overall effect: Z = 3.39 (P = 0.0007)				
Total (95% CI)			**100.0%**	**0.0328 [0.0252, 0.0404]**
Heterogeneity: Tau² = 0.00; Chi² = 263.40, df = 38 (P < 0.00001); I² = 86%				
Test for overall effect: Z = 8.46 (P < 0.00001)				
Test for subgroup differences: Chi² = 4.56, df = 1 (P = 0.03), I² = 78.1%				



7.7.2. Table of sensitivity analysis of the incidence of enterotomy, impact of study design

Study	Point estimate	95%CI
All available studies	0.0328	0.0252-0.0404
Retrospective studies only	0.0393	0.0287-0.0499
Prospective studies only	0.0215	0.0091-0.0339

7.8.1. Sensitivity analysis of the incidence of enterotomy, stratified by publication date



7.8.2. Table of sensitivity analysis of the incidence of enterotomy, impact of publication date

Study	Point estimate	95%CI
All available studies	0.0328	0.0252-0.0404
Studies published before the year 2000	0.0269	0.0142-0.0396
Studies published in the year 2000 and later	0.0364	0.0264-0.0463

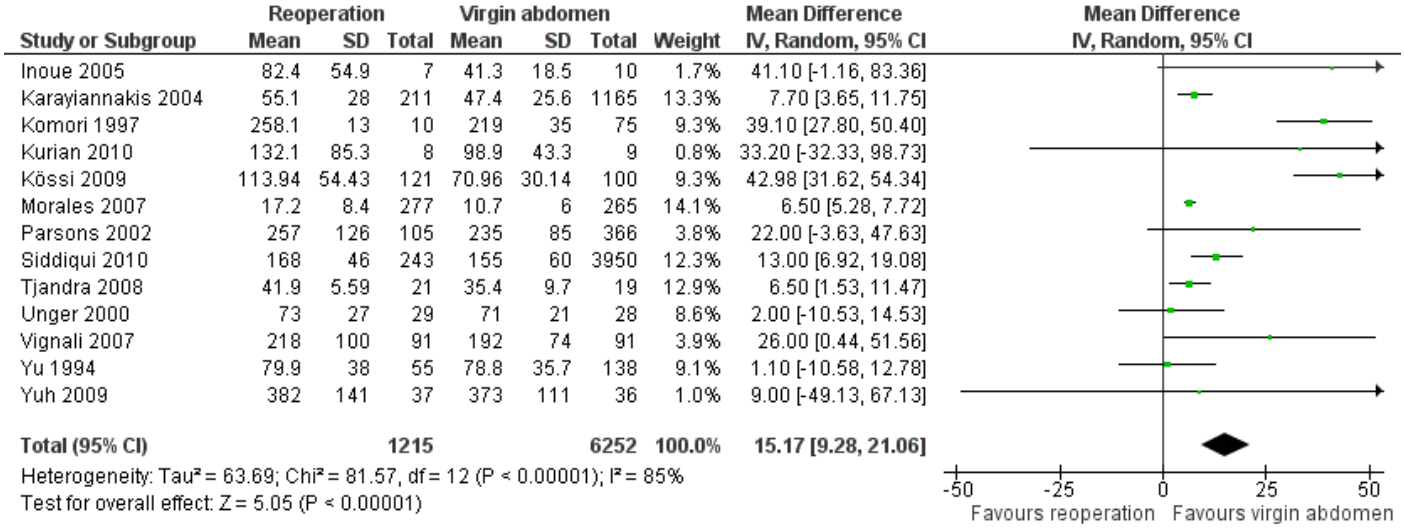
8.1.1. Table of quantitative analysis of operative time

13 studies included in meta-analysis
27 in qualitative analysis qualitative analysis

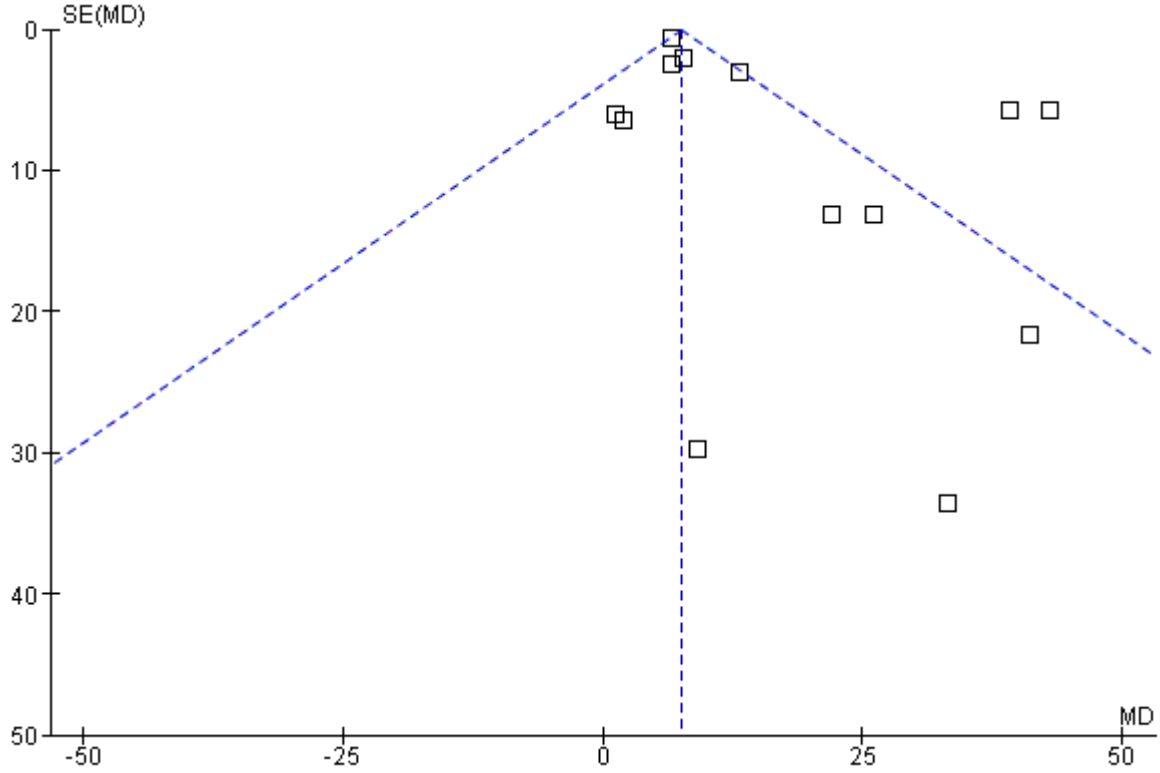
Study	General informtion		Virging abdomen		Reoperation	
	Virgo	Operation	N	time (mean ± SD)	N	time (mean ± SD)
Aminsharifi 2011	virgo	urology	50	62.3 (45-190)†	29	98.6 (55-190)†
Boone 2012	virgo	Colorectal	12	94	18	114
Coleman 2000	Virgo	General surgery	53	5 (3-10)*	67	8 (4-39)*
Hamel 2000	virgo	Colorectal	49	148 (70-270)†	36	151 (90-260)†
Inoue 2005	barrier	General surgery	10	41.3±18.5	7	82.4±54.9
Karayiannakis 2004	virgo	Cholecystectomy	1165	47.4±25.6	211	55.1±28
Kawamura 2009	barrier	Lower GI	18	106.9	18	120.6
Komori 1997	virgo	Aorta surgery	75	219±35	10	258.1±13
Kössi 2009	barrier	Colorectal	9	98.9±43.3	8	132.1±85.3
Kurian 2010	virgo	Abdominal wall	100	71.0±30.1	121	113.9±54.4
Kusunoki 2005	barrier	Colorectal	30	95 (65-140)*	29	105 (65-175)†
Kwok 2004	Virgo	Colorectal	65	123 (95-135)*	26	115 (70-185)*
Morales 2007	Virgo	Caesarean section	265	10.7±6	277	17.2±8.4
Naguib 2012	Virgo	Colorectal	113	217 (60-520)	68	233 (114-544)*
Nazemi 2006	Virgo	Urology	21	447 (196-828)*	28	528 (153-922)*
Nozaki 2008	Virgo	Colorectal	100	155 (80-337)*	21	175 (75-330)*
Oliveira 1997	Virgo	Lower GI	18	55	14	117
Parsons 2002	Virgo	Urology	366	235±85	105	257±126
Pohl 2008	Virgo	Urology	57	116	33	114
Seki 2007	Virgo	Colorectal	43	181	14	197
Siddiqui 2010	Virgo	Urology	3950	155±60	243	168±46
Tang 2003	barrier	Lower GI	36	20 (10-65)*	34	20 (10-40)*
Tjandra 2008	barrier	Lower GI	19	35.4±9.7	21	41.9±5.6
Unger 2000	Virgo	Cholecystectomy	28	71±21	29	73±27
Vignali 2007	Virgo	Colorectal	91	192±74	91	218±100
Yu 1994	Virgo	Cholecystectomy	138	78.8±35.7	55	79.9±38
Yuh 2009	virgo	Urology	36	373±111	37	382±141

* median (range)
† mean (range)

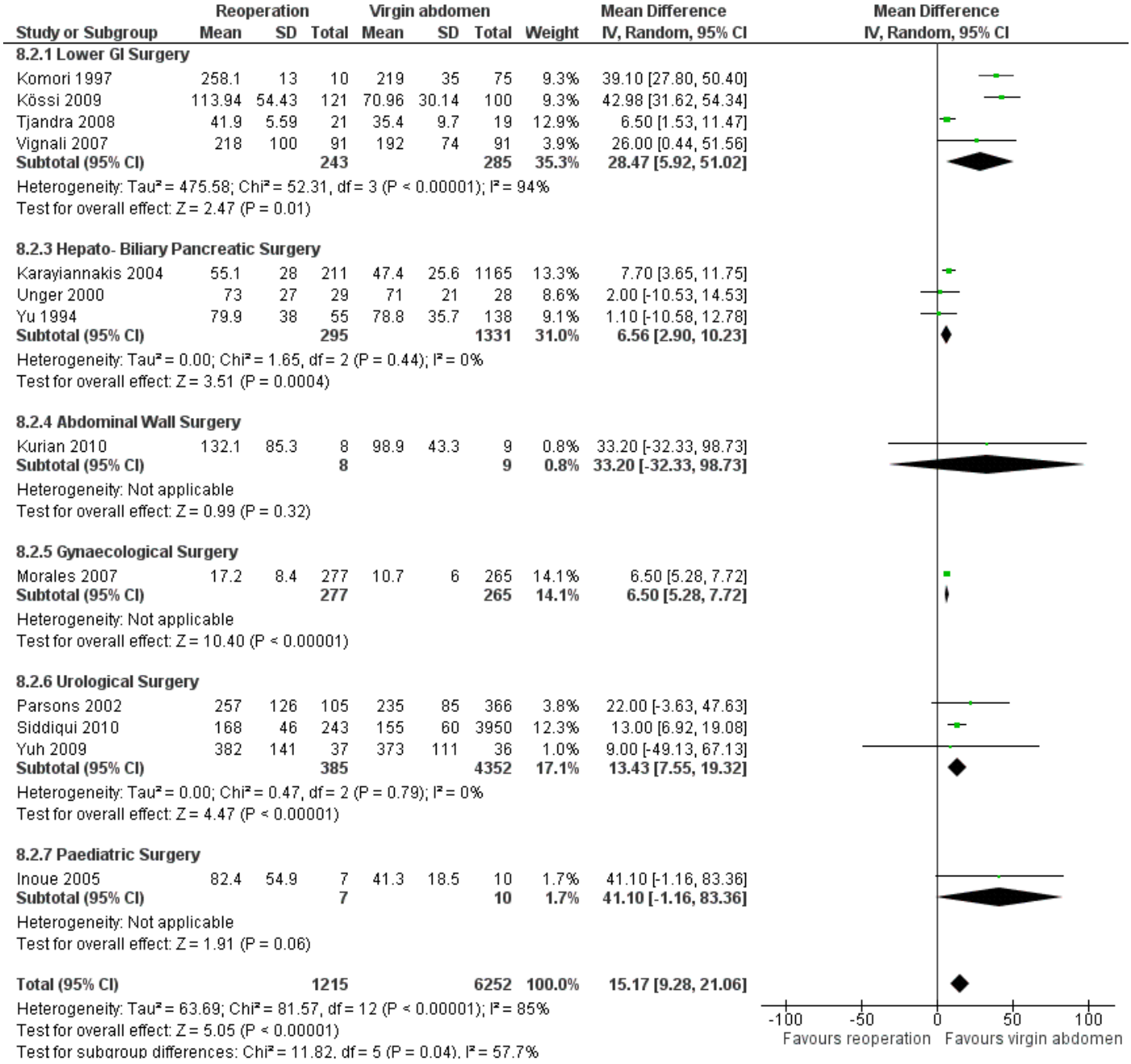
8.1.2. Forest plot of operative time



8.1.3. Funnel plot of studies included in quantitative analysis of operative time

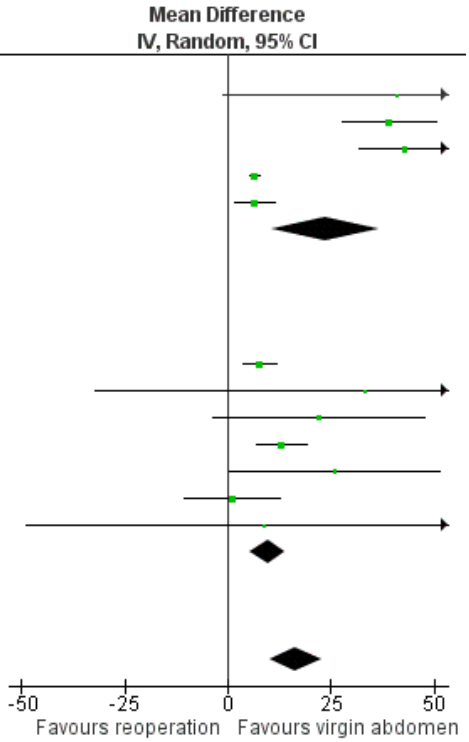


8.2.1. Forest plot of operative time, stratified by anatomical location



8.3.1. Forest plot of operative time, stratified by surgical technique
1 studied excluded. Surgical technique not specified in 1 study.

Study or Subgroup	Reoperation Mean	SD	Total	Virgin abdomen Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI
8.3.1 Laparotomy								
Inoue 2005	82.4	54.9	7	41.3	18.5	10	1.9%	41.10 [-1.16, 83.36]
Komori 1997	258.1	13	10	219	35	75	10.2%	39.10 [27.80, 50.40]
Kössi 2009	113.94	54.43	121	70.96	30.14	100	10.2%	42.98 [31.62, 54.34]
Morales 2007	17.2	8.4	277	10.7	6	265	15.3%	6.50 [5.28, 7.72]
Tjandra 2008	41.9	5.59	21	35.4	9.7	19	14.0%	6.50 [1.53, 11.47]
Subtotal (95% CI)			**436**			**469**	**51.6%**	**23.65 [10.78, 36.52]**
Heterogeneity: Tau² = 167.89; Chi² = 72.55, df = 4 (P < 0.00001); I² = 94%								
Test for overall effect: Z = 3.60 (P = 0.0003)								
8.3.2 Laparoscopy								
Karayiannakis 2004	55.1	28	211	47.4	25.6	1165	14.4%	7.70 [3.65, 11.75]
Kurian 2010	132.1	85.3	8	98.9	43.3	9	0.9%	33.20 [-32.33, 98.73]
Parsons 2002	257	126	105	235	85	366	4.3%	22.00 [-3.63, 47.63]
Siddiqui 2010	168	46	243	155	60	3950	13.4%	13.00 [6.92, 19.08]
Vignali 2007	218	100	91	192	74	91	4.3%	26.00 [0.44, 51.56]
Yu 1994	79.9	38	55	78.8	35.7	138	10.0%	1.10 [-10.58, 12.78]
Yuh 2009	382	141	37	373	111	36	1.1%	9.00 [-49.13, 67.13]
Subtotal (95% CI)			**750**			**5755**	**48.4%**	**9.61 [5.39, 13.83]**
Heterogeneity: Tau² = 4.92; Chi² = 7.01, df = 6 (P = 0.32); I² = 14%								
Test for overall effect: Z = 4.46 (P < 0.00001)								
Total (95% CI)			**1186**			**6224**	**100.0%**	**16.49 [10.23, 22.75]**
Heterogeneity: Tau² = 66.39; Chi² = 80.84, df = 11 (P < 0.00001); I² = 86%								
Test for overall effect: Z = 5.16 (P < 0.00001)								
Test for subgroup differences: Chi² = 4.13, df = 1 (P = 0.04), I² = 75.8%								

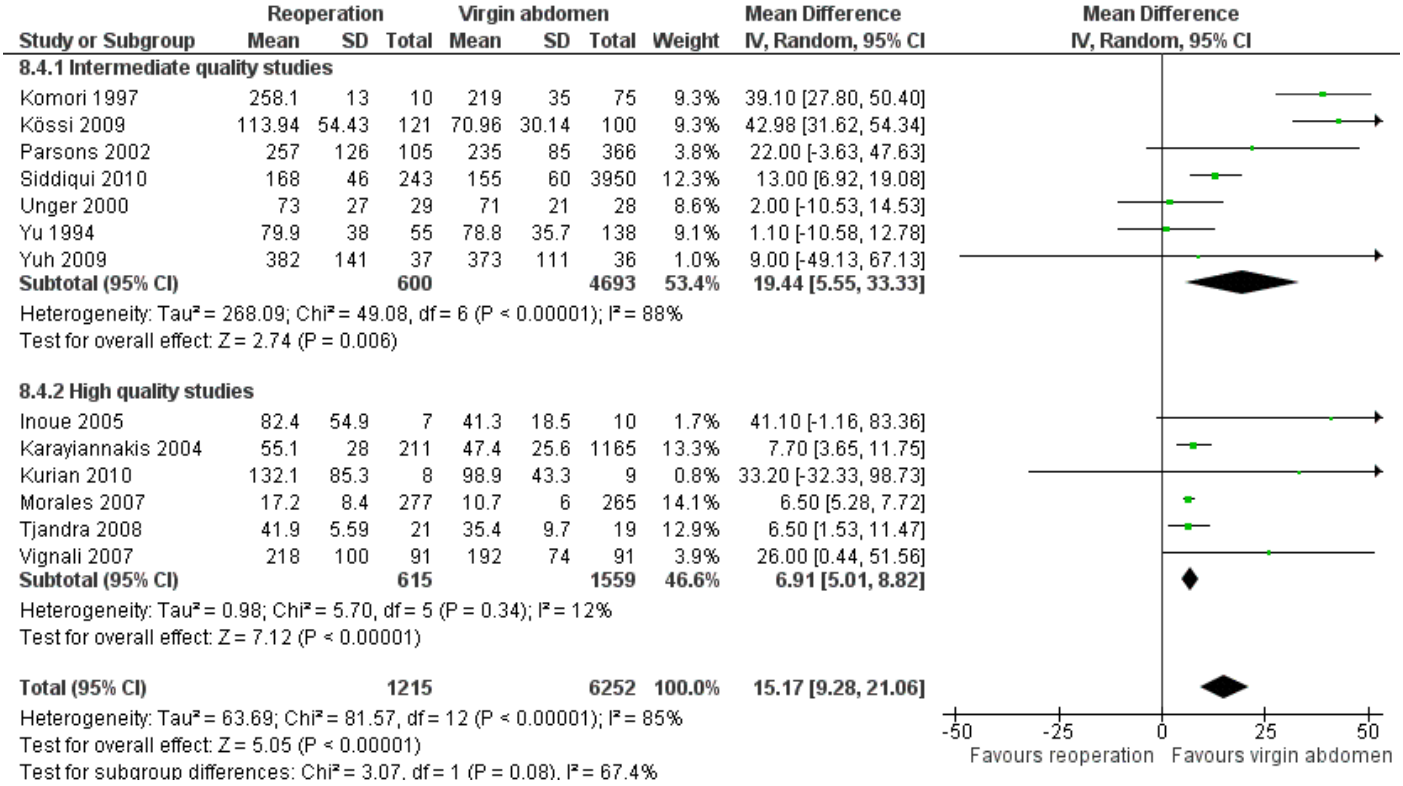


8.4.1. Sensitivity analysis of operative time, impact of individual studies

Study	Pont estimate	95%CI
All studies included	15.17	9.28-21.06
Inoue 2005	14.70	8.80-20.60
Karayiannakis 2004	16.94*	9.50-24.38
Komori 1997	12.01*	6.87-17.14
Kurian 2010	15.04	9.11-20.97
Kössi 2009	11.38*	6.61-16.15
Morales 2007	17.43*	9.32-25.54
Parsons 2002	14.90	8.89-20.92
Siddiqui 2010	15.70	9.09-22.31
Tjandra 2008	16.85*	9.87-23.83
Unger 2000	16.49	10.23-22.75
Vignali 2007	14.73*	8.73-20.72
Yu 1994	16.65	10.38-22.93
Yuh 2009	15.25	9.30-21.21

* >10% effect on point estimate

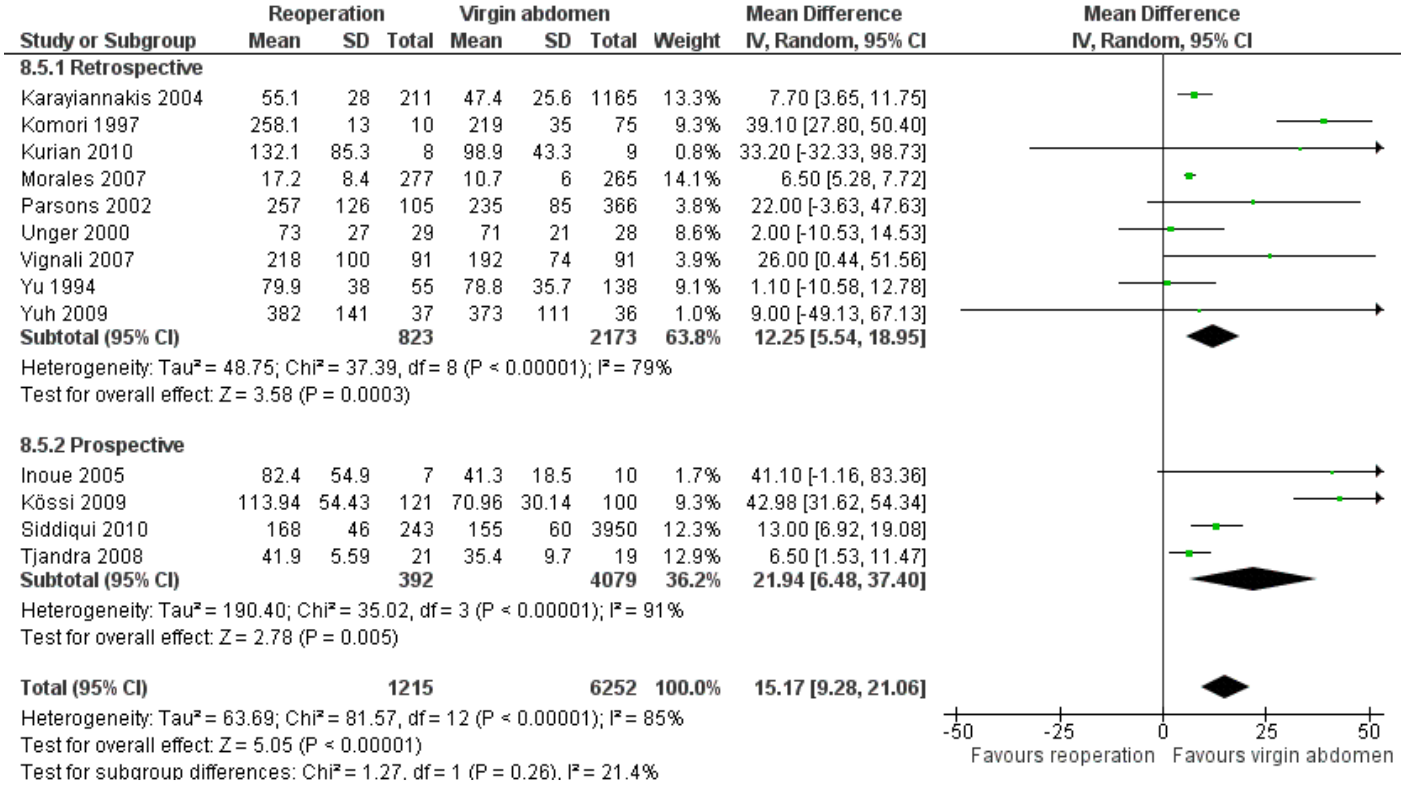
8.5.1. Sensitivity analysis of operative time, stratified by quality of study



8.5.2. Table of sensitivity analysis of operative time, impact of quality of studies

Study	Point estimate	95%CI
All available studies	15.17	9.28-21.06
Low Quality studies only	NA	NA
Intermediate Quality studies only	19.44	5.55-33.33
High studies only	6.91	5.01-8.82

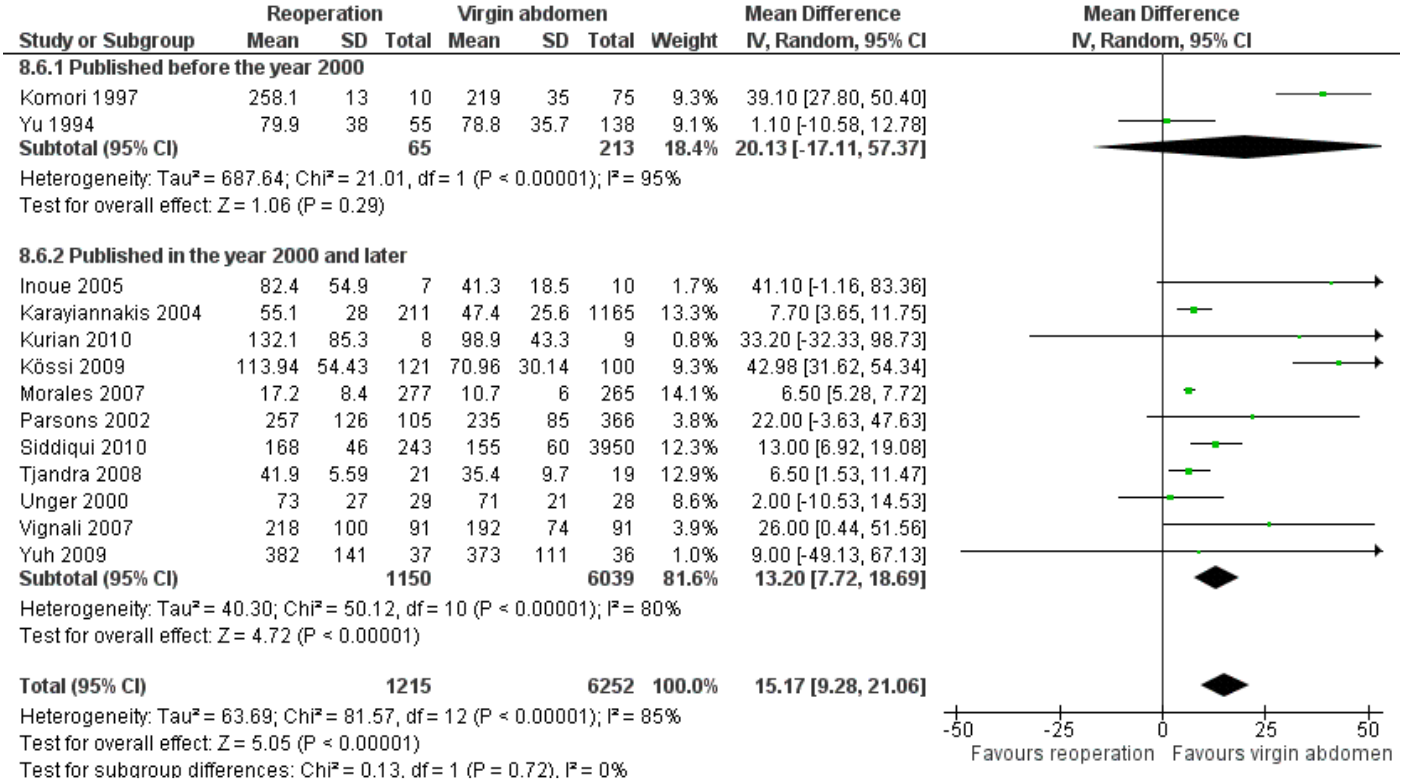
8.6.2. Table of sensitivity analysis of operative time, impact of study design



8.6.2. Table of sensitivity analysis of operative time, impact of study design

Study	Point estimate	95%CI
All available studies	15.17	9.28-21.06
Retrospective only	12.25	5.54-18.95
Prospective only	21.94	9.28-21.06

8.7.1. Sensitivity analysis of operative time, stratified by publication date



8.7.2. Table of sensitivity analysis of operative time, impact of publication date

Study	Point estimate	95%CI
All available studies	15.17	9.28-21.06
Studies published before the year 2000	20.13	-17.11-57.37
Studies published in the year 2000 and later	13.20	7.72-18369

9.1.1. Table of pregnancy rates

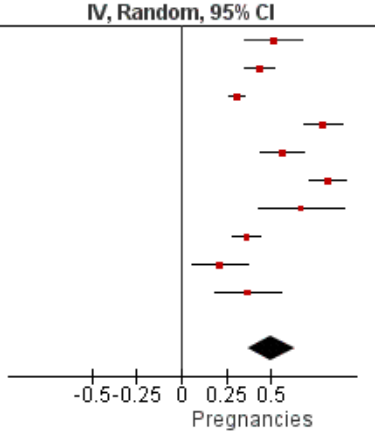
Study	Data collection	N	Respons N	Attempted pregnancy	Length of follow-up	Pregnancies	Reference population
Counihan 1994	Quastionnaire	203	110	37	12	18	Before surgery
Gorgun 2004	Questionnaire	500	300	135	12	59	Before surgery
Hahnloser 2004	Questionnaire	544	436	436*	158±69	135	Before surgery
Hudson 1997	Questionnaire	460	409	57	24	45	Medical treated patients
Johnson 2004	Questionnaire	323	254	66	12	37	Before surgery
Lepisto 2007	Questionnaire	160	138	54	106(13-230)	44	No useful ref.
Mortier 2006	Structured Interview	37	37	15	60	10	Before surgery
Olsen 2002	Structured Interview	343	290	149	60	54	Before surgery
Òresland 1994	Structured Interview	60	60	28	12	6	Before surgery
Wikland 1990	Structured Interview	71	71	27	60	10	Before surgery

*Fertility for 436 patients before and after surgery number of attempts not adequatelty described

9.1.2. Forest plot of the pregnancy rate, including all studies

Study or Subgroup	Pregnancies	SE	Patients Total	Pregnancy Total	Weight	Pregnancies IV, Random, 95% CI
Counihan 1994	0.513514	0.082169	37	19	9.5%	0.51 [0.35, 0.67]
Gorgun 2004	0.43703704	0.04269059	135	59	10.7%	0.44 [0.35, 0.52]
Hahnloser 2004	0.30963303	0.02214218	436	135	11.1%	0.31 [0.27, 0.35]
Hudson 1997	0.78947368	0.05399886	57	45	10.4%	0.79 [0.68, 0.90]
Johnson 2004	0.56060606	0.06109195	66	37	10.2%	0.56 [0.44, 0.68]
Lepisto 2007	0.81481481	0.05286104	54	44	10.4%	0.81 [0.71, 0.92]
Mortier 2006	0.66666667	0.12171612	15	10	8.1%	0.67 [0.43, 0.91]
Olsen 2002	0.36241611	0.03938032	149	54	10.8%	0.36 [0.29, 0.44]
Oresland 1994	0.21428571	0.07754431	28	6	9.7%	0.21 [0.06, 0.37]
Wikland 1990	0.37037037	0.0929349	27	10	9.1%	0.37 [0.19, 0.55]
Total (95% CI)			**1004**	**419**	**100.0%**	**0.50 [0.37, 0.63]**

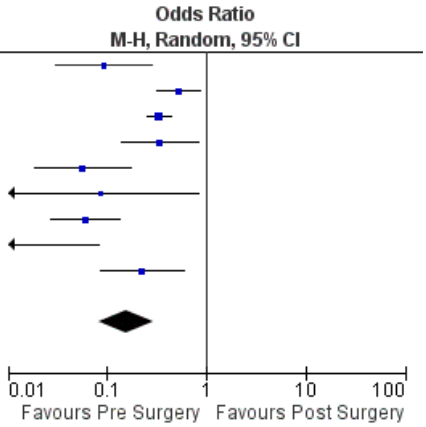
Heterogeneity: Tau² = 0.04; Chi² = 147.37, df = 9 (P < 0.00001); I² = 94%
Test for overall effect: Z = 7.63 (P < 0.00001)



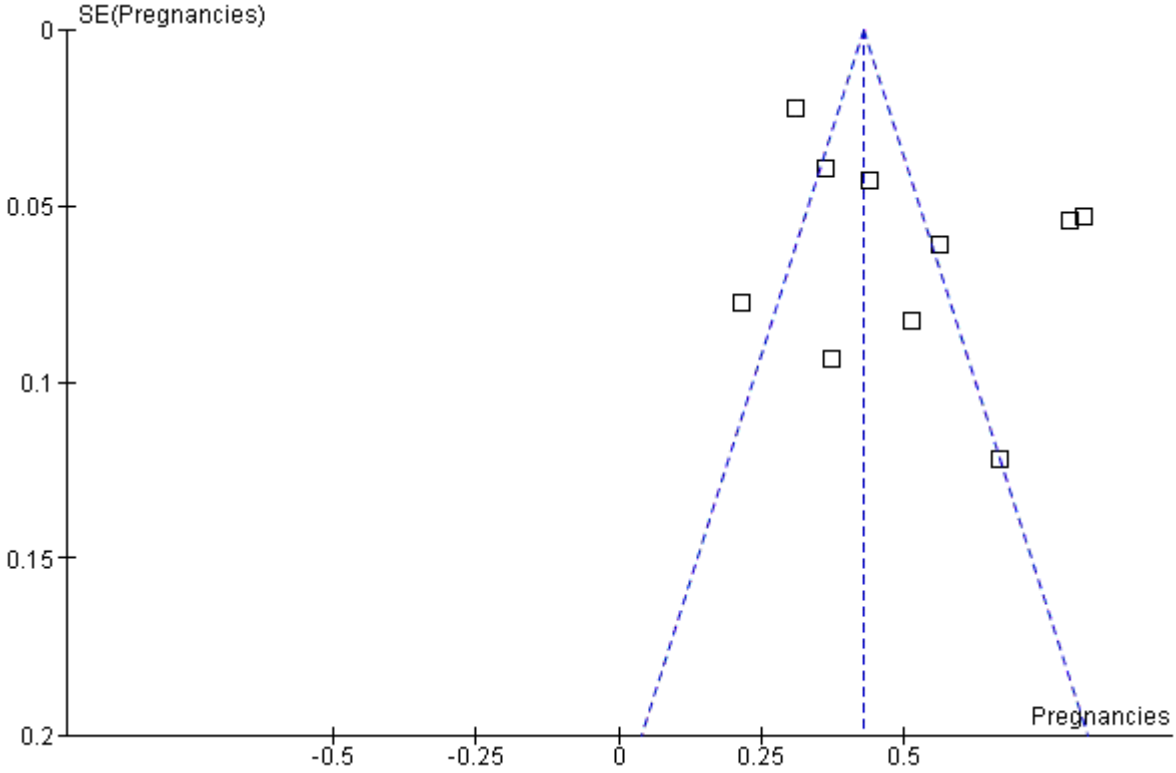
9.1.3. Forest plot of the pregnancy rate compared between operated and not operated patients

Study or Subgroup	Post colorectal surgery Events	Total	Pre colorectal surgery Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Counihan 1994	19	37	57	62	11.0%	0.09 [0.03, 0.28]
Gorgun 2004	59	135	76	127	15.1%	0.52 [0.32, 0.85]
Hahnloser 2004	135	436	252	436	16.1%	0.33 [0.25, 0.43]
Hudson 1997	45	57	122	133	12.6%	0.34 [0.14, 0.82]
Johnson 2004	37	66	91	95	11.0%	0.06 [0.02, 0.17]
Mortier 2006	10	15	23	24	5.3%	0.09 [0.01, 0.84]
Olsen 2002	54	149	76	84	13.2%	0.06 [0.03, 0.13]
Oresland 1994	6	28	32	32	3.7%	0.00 [0.00, 0.08]
Wikland 1990	10	27	39	54	11.9%	0.23 [0.08, 0.60]
Total (95% CI)		**950**		**1047**	**100.0%**	**0.15 [0.08, 0.29]**
Total events	375		768			

Heterogeneity: Tau² = 0.63; Chi² = 43.27, df = 8 (P < 0.00001); I² = 82%
Test for overall effect: Z = 5.77 (P < 0.00001)



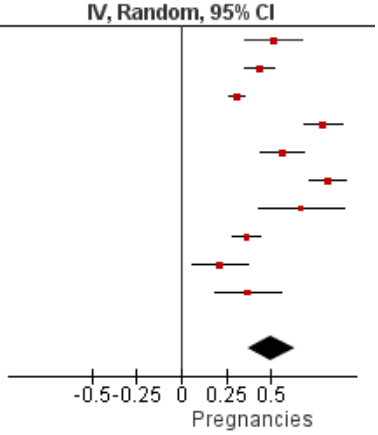
9.1.4. Funnel plot of studies included in analysis of pregnancy rate



9.2.1. Forest plot of analysis for the pregnancy rate in studies with adequate description of follow-up for best and worst case scenario analysis.
All studies included. Two studies with no loss to follow-up.

Study or Subgroup	Pregnancies	SE	Patients Total	Pregnancy Total	Weight	Pregnancies IV, Random, 95% CI
Counihan 1994	0.513514	0.082169	37	19	9.5%	0.51 [0.35, 0.67]
Gorgun 2004	0.43703704	0.04269059	135	59	10.7%	0.44 [0.35, 0.52]
Hahnloser 2004	0.30963303	0.02214218	436	135	11.1%	0.31 [0.27, 0.35]
Hudson 1997	0.78947368	0.05399886	57	45	10.4%	0.79 [0.68, 0.90]
Johnson 2004	0.56060606	0.06109195	66	37	10.2%	0.56 [0.44, 0.68]
Lepisto 2007	0.81481481	0.05286104	54	44	10.4%	0.81 [0.71, 0.92]
Mortier 2006	0.66666667	0.12171612	15	10	8.1%	0.67 [0.43, 0.91]
Olsen 2002	0.36241611	0.03938032	149	54	10.8%	0.36 [0.29, 0.44]
Oresland 1994	0.21428571	0.07754431	28	6	9.7%	0.21 [0.06, 0.37]
Wikland 1990	0.37037037	0.0929349	27	10	9.1%	0.37 [0.19, 0.55]
Total (95% CI)			**1004**	**419**	**100.0%**	**0.50 [0.37, 0.63]**

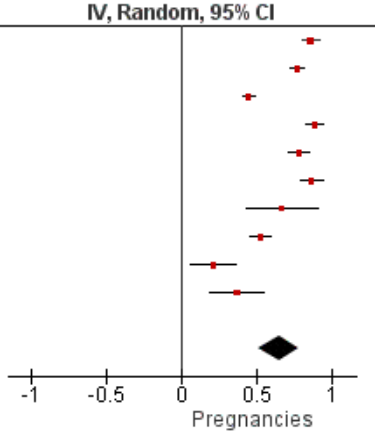
Heterogeneity: $Tau^2 = 0.04$; $Chi^2 = 147.37$, df = 9 ($P < 0.00001$); $I^2 = 94\%$
Test for overall effect: $Z = 7.63$ ($P < 0.00001$)



9.2.2. Forest plot of best case analysis for the pregnancy rate

Study or Subgroup	Pregnancies	SE	Patients Total	Pregnancy Total	Weight	Pregnancies IV, Random, 95% CI
Counihan 1994	0.86153846	0.03029216	130	112	10.5%	0.86 [0.80, 0.92]
Gorgun 2004	0.77313433	0.02288176	335	259	10.6%	0.77 [0.73, 0.82]
Hahnloser 2004	0.44669118	0.02131513	544	243	10.7%	0.45 [0.40, 0.49]
Hudson 1997	0.88888889	0.03024061	108	96	10.5%	0.89 [0.83, 0.95]
Johnson 2004	0.78518519	0.0353469	135	106	10.5%	0.79 [0.72, 0.85]
Lepisto 2007	0.86842105	0.03877498	76	66	10.4%	0.87 [0.79, 0.94]
Mortier 2006	0.66666667	0.12171612	15	10	7.9%	0.67 [0.43, 0.91]
Olsen 2002	0.52970297	0.03511775	202	107	10.5%	0.53 [0.46, 0.60]
Oresland 1994	0.21428571	0.07754431	28	6	9.4%	0.21 [0.06, 0.37]
Wikland 1990	0.37037037	0.0929349	27	10	8.9%	0.37 [0.19, 0.55]
Total (95% CI)			**1600**	**1015**	**100.0%**	**0.65 [0.52, 0.78]**

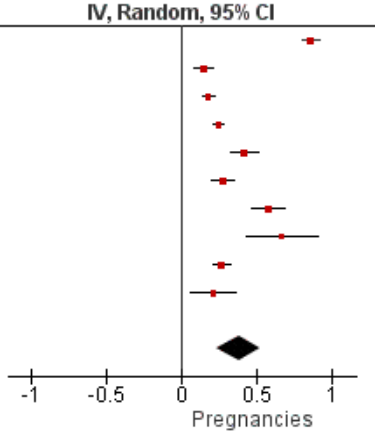
Heterogeneity: Tau² = 0.04; Chi² = 317.51, df = 9 (P < 0.00001); I² = 97%
Test for overall effect: Z = 9.74 (P < 0.00001)



9.2.3. Forest plot of worst case analysis for the pregnancy rate

Study or Subgroup	Pregnancies	SE	Patients Total	Pregnancy Total	Weight	Pregnancies IV, Random, 95% CI
Counihan 1994	0.86153846	0.03029216	130	112	10.4%	0.86 [0.80, 0.92]
Gorgun 2004	0.14615385	0.03098299	130	19	10.3%	0.15 [0.09, 0.21]
Hahnloser 2004	0.1761194	0.02081198	335	59	10.5%	0.18 [0.14, 0.22]
Hudson 1997	0.24816176	0.01851954	544	135	10.5%	0.25 [0.21, 0.28]
Johnson 2004	0.41666667	0.04743959	108	45	10.1%	0.42 [0.32, 0.51]
Lepisto 2007	0.27407407	0.03838957	135	37	10.3%	0.27 [0.20, 0.35]
Mortier 2006	0.57894737	0.05663448	76	44	9.9%	0.58 [0.47, 0.69]
Olsen 2002	0.66666667	0.12171612	15	10	8.3%	0.67 [0.43, 0.91]
Oresland 1994	0.26732673	0.03113871	202	54	10.3%	0.27 [0.21, 0.33]
Wikland 1990	0.21428571	0.07754431	28	6	9.5%	0.21 [0.06, 0.37]
Total (95% CI)			**1703**	**521**	**100.0%**	**0.38 [0.23, 0.53]**

Heterogeneity: Tau² = 0.05; Chi² = 452.46, df = 9 (P < 0.00001); I² = 98%
Test for overall effect: Z = 5.05 (P < 0.00001)



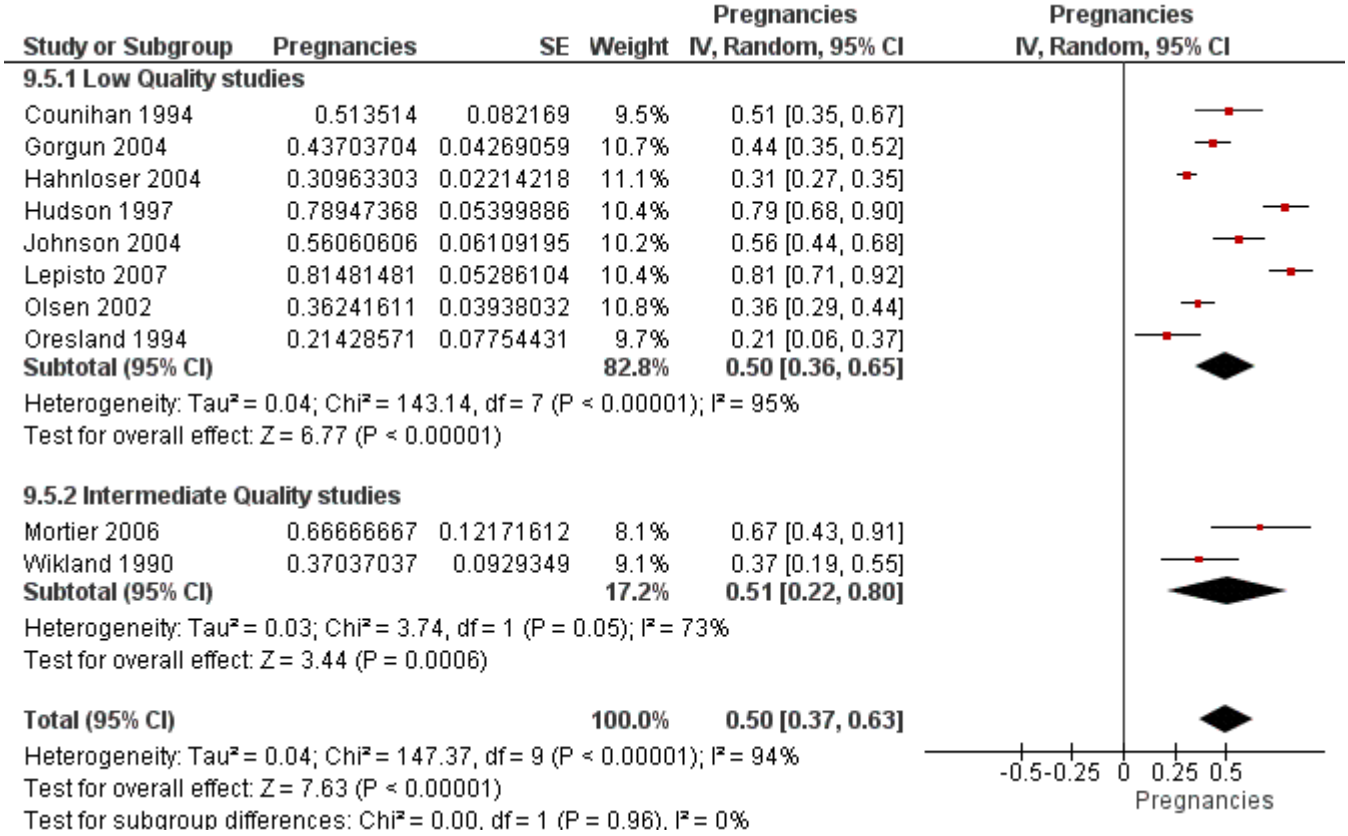
9.3.1. Pregnancy rate, by anatomical location:
Not applicable, all studies after Lower- GI surgery

9.4.1. Pregnancy rate, by surgical technique:
Not applicable, all studies after laparotomy

9.5.1. Sensitivity analysis of the pregnancy rate, impact of individual studies

Study	Point estimate	95% CI
All studies included	0.50	0.37-0.63
Counihan 1994	0.50	0.36-0.64
Gorgun 2004	0.51	0.36-0.60
Hahnloser 2004	0.53	0.39-0.66
Hudson 1997	0.47	0.35-0.59
Johnson 2004	0.50	0.36-0.64
Lepisto 2007	0.46	0.35-0.58
Mortier 2006	0.49	0.35-0.62
Olsen 2002	0.52	0.37-0.67
Oresland 1994	0.53	0.40-0.67
Wikland 1990	0.52	0.38-0.65

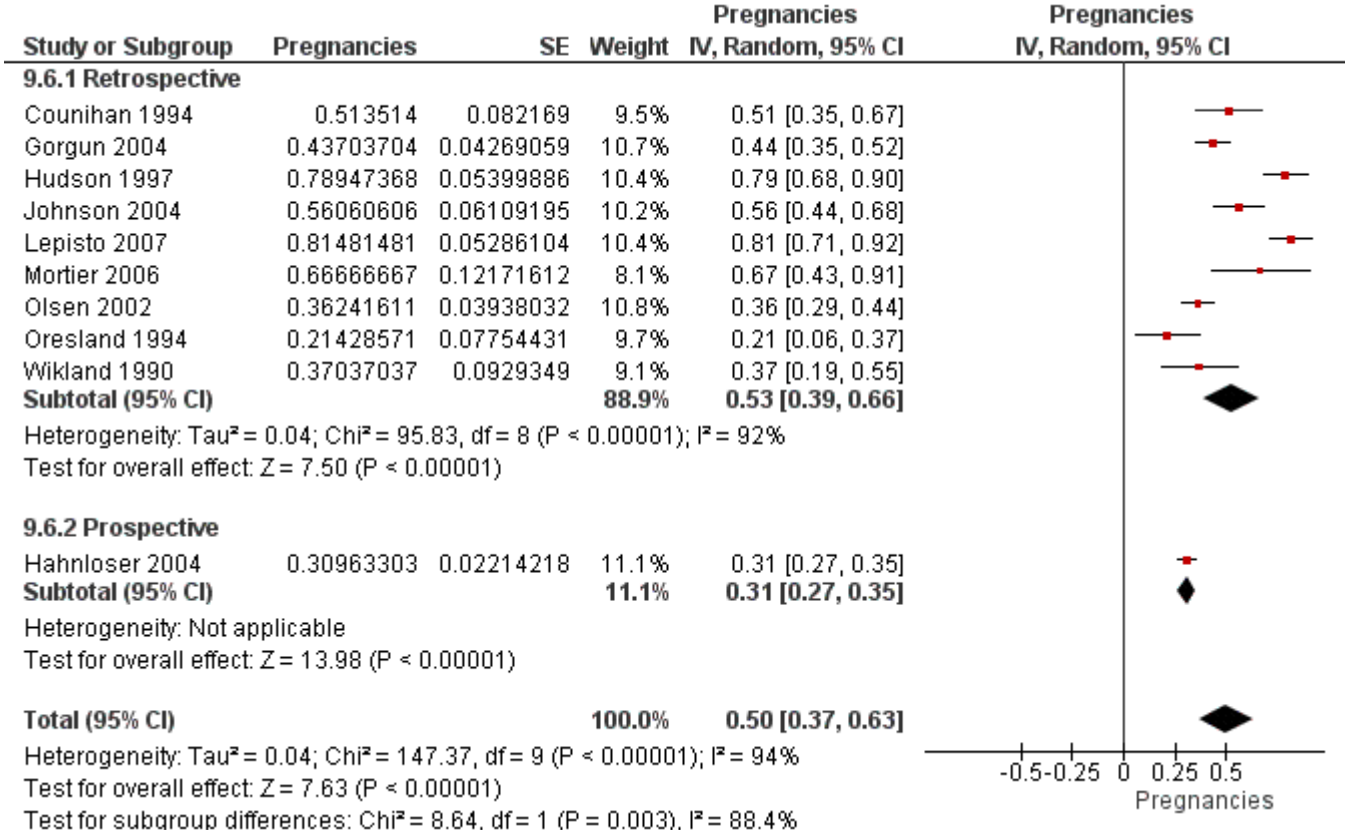
9.6.1. Sensitivity analysis of the pregnancy rate, stratified by quality of study



9.6.2. Table of sensitivity analysis of the pregnancy rate, impact of quality of studies

Study	Point estimate	95% CI
All studies included	0.50	0.37-0.63
Low Quality studies only	0.50	0.36-0.65
Intermediate Quality studies only	0.51	0.22-0.80
High Quality studies only	NA	NA

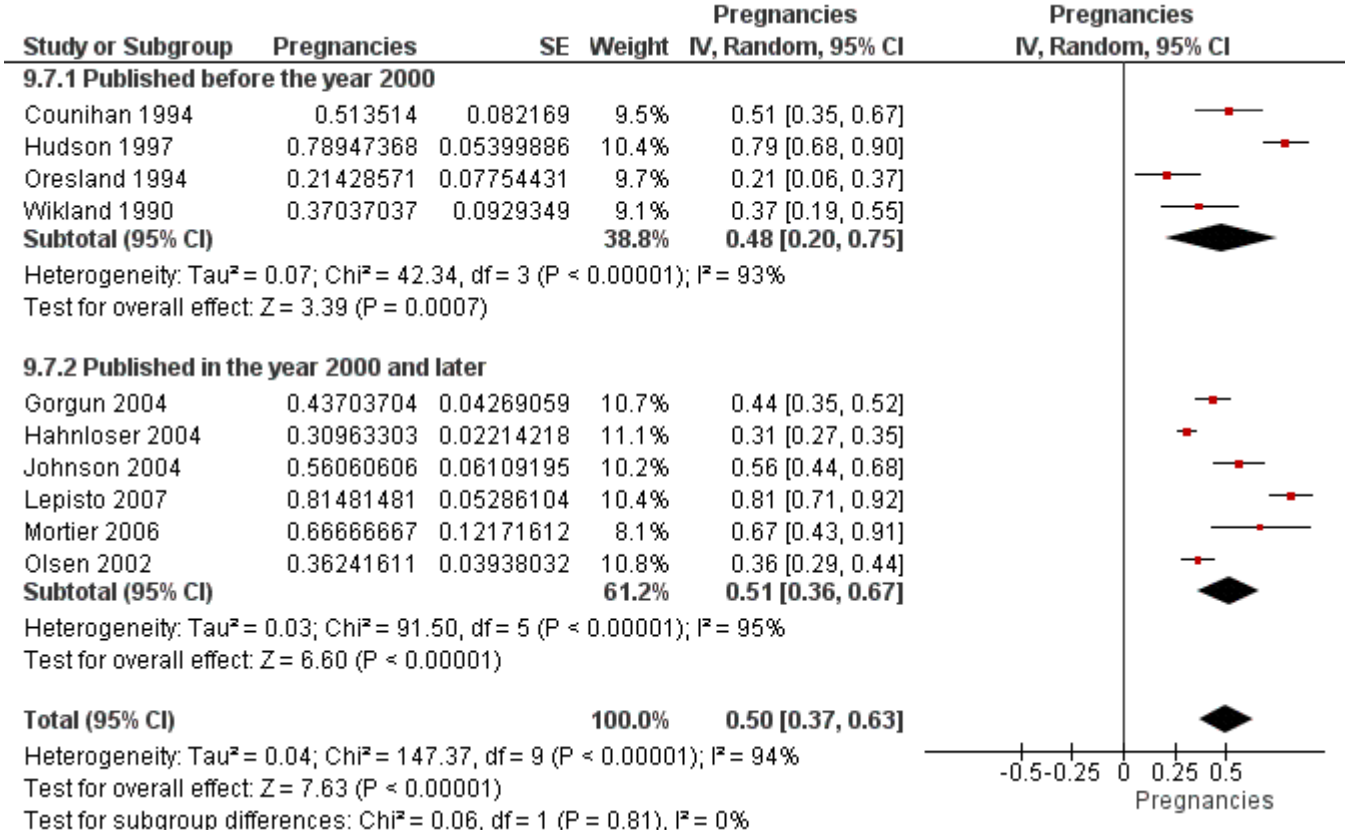
9.7.1. Sensitivity analysis of the pregnancy rate, stratified by study design



9.7.2. Table of sensitivity analysis of the pregnancy rate, impact of study design

Study	Point estimate	95% CI
All studies included	0.50	0.37-0.63
Retrospective studies only	0.53	0.39-0.66
Prospective studies only	0.31	0.27-0.35

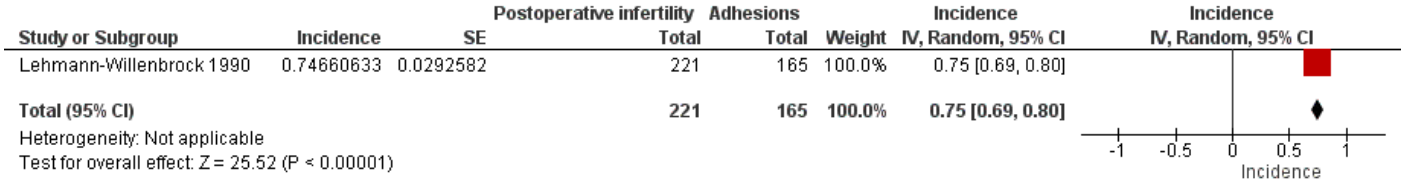
9.8.1. Sensitivity analysis of the pregnancy rate, stratified by publication date



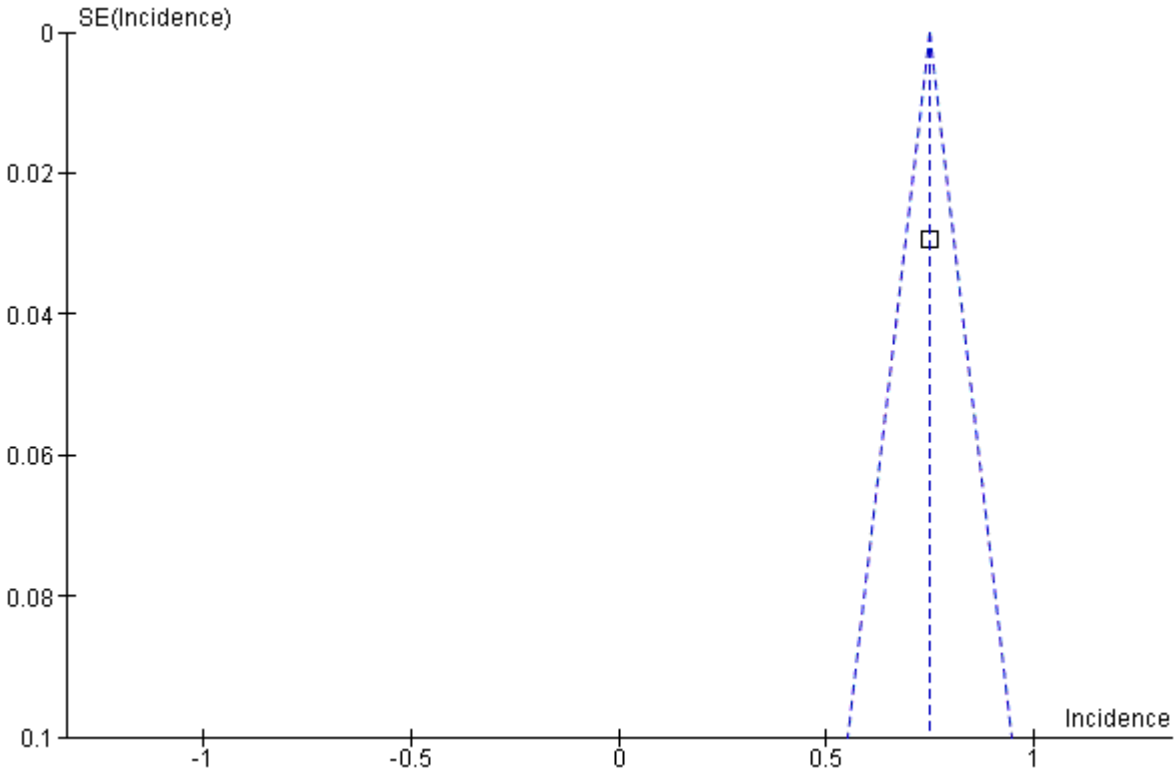
9.8.2. Table of sensitivity analysis of the pregnancy rate, impact of publication date

Study	Point estimate	95% CI
All studies included	0.50	0.37-0.63
Studies published before the year 2000 only	0.48	0.20-0.75
Studies published in the year 2000 and later only	0.51	0.36-0.67

10.1.1. Forest plot of the cross sectional incidence of adhesions in patients with postoperative infertility, including all studies



10.1.2. 10.1.2. Funnel plot of studies included in analysis of incidence of adhesions in patients with postoperative infertility



10.2.1 incidence of adhesions in patients with postoperative infertility, by anatomical location:
Not applicable, all studies lower GI surgery (appendectomy)

10.3.1. incidence of adhesions in patients with postoperative infertility, by surgical technique
Not applicable, surgical technique not specified in 1 study.

10.4.1. Sensitivity analysis of the cross-sectional incidence of ASBO, impact of individual sudies
Not applicable, only 1 study in analysis

10.5.1. Sensitivity analysis of incidence of adhesions in patients with postoperative infertility, impact of quality of study
Not applicable, all studies intermediate quality

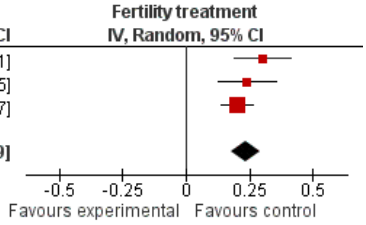
10.6.1. Sensitivity analysis of incidence of adhesions in patients with postoperative infertility, impact of study design
Not applicable, all studies retrospective

10.7.1. Sensitivity analysis of incidence of adhesions in patients with postoperative infertility, impact of publication date
Not applicable, all studies published before the year 2000

11.1.1. Forest plot of the utilization of fertility treatment, including all studies

Study or Subgroup	Fertility treatment	SE	Postoperative patient Total	Fertility treatment Total	Weight	Fertility treatment IV, Random, 95% CI
Johnson 2004	0.3030303	0.05656894	66	20	23.5%	0.30 [0.19, 0.41]
Lepisto 2007	0.24074074	0.0581799	54	13	22.4%	0.24 [0.13, 0.35]
Olsen 2002	0.20134228	0.03285146	149	30	54.2%	0.20 [0.14, 0.27]
Total (95% CI)			**269**	**63**	**100.0%**	**0.23 [0.18, 0.29]**

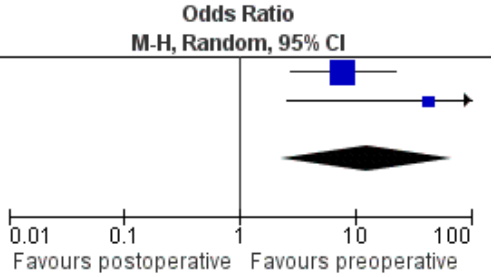
Heterogeneity: Tau² = 0.00; Chi² = 2.46, df = 2 (P = 0.29); I² = 19%
Test for overall effect: Z = 7.90 (P < 0.00001)



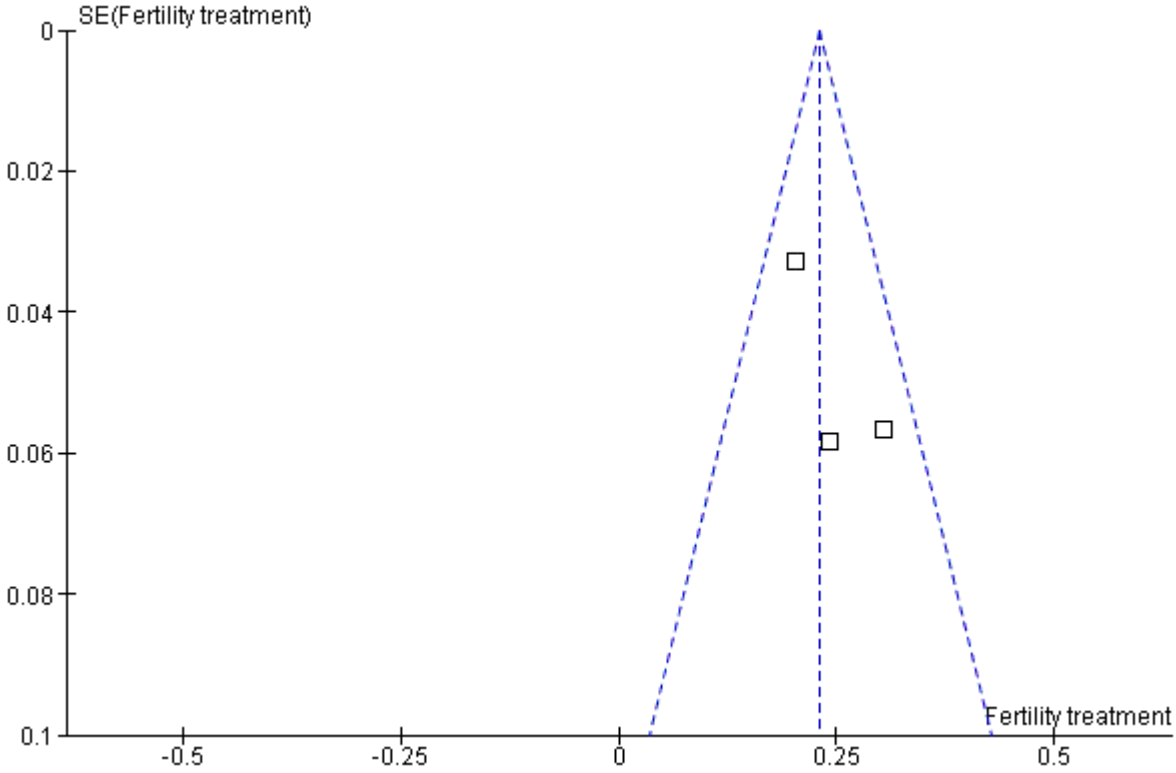
11.1.2. Forest plot of the utilization of fertility treatment, compared between preoperative and postoperative patients

Study or Subgroup	Postoperative Events	Total	Preoperative Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Johnson 2004	20	66	5	95	73.1%	7.83 [2.76, 22.19]
Olsen 2002	30	149	0	84	26.9%	43.13 [2.60, 715.22]
Total (95% CI)		**215**		**179**	**100.0%**	**12.39 [2.26, 67.97]**
Total events	50		5			

Heterogeneity: Tau² = 0.75; Chi² = 1.64, df = 1 (P = 0.20); I² = 39%
Test for overall effect: Z = 2.90 (P = 0.004)



11.1.3. Funnel plot of studies included in the analysis of the utilization of fertility treatment



11.2.1. Utilization of fertility treatment, by anatomical location
Not applicable. All studies in Lower GI Surgery

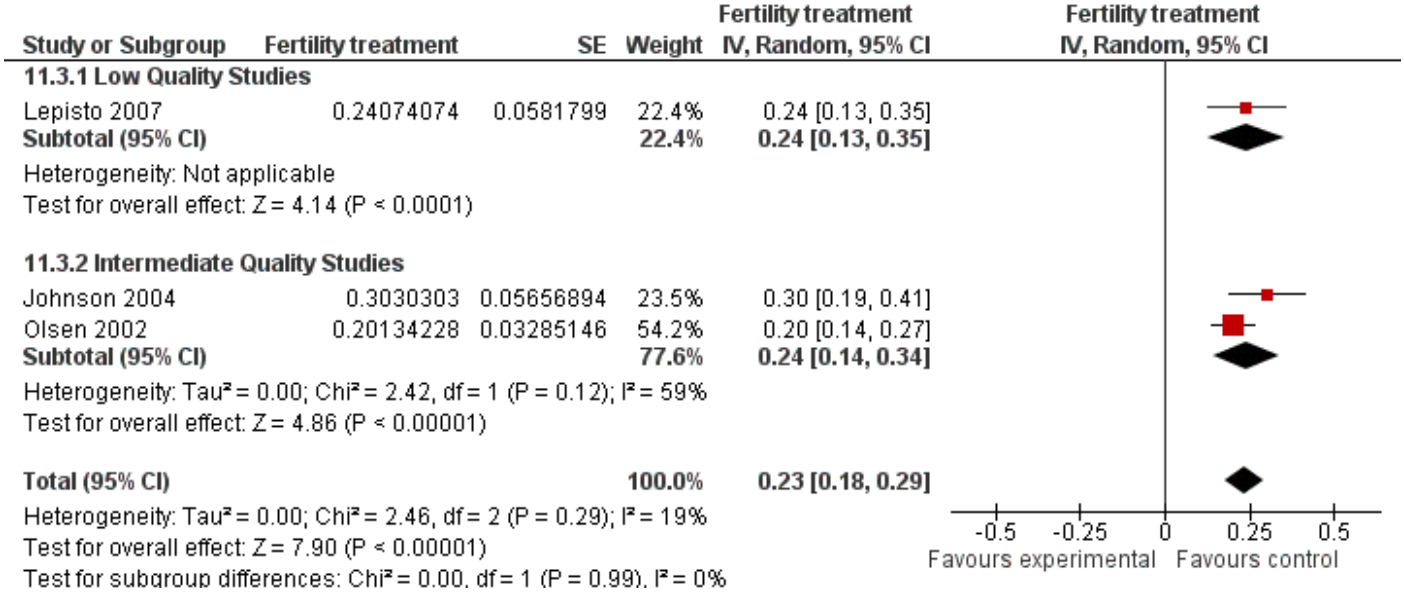
11.3.1. Utilization of fertility treatment, by surgical technique
Not applicable. All studies in laparotomy.

11.4.1. Sensitivity analysis of the utilization of fertility treatment, impact of individual studies

Study	Point estimate	95% CI
All studies included	0.23	0.18-0.29
Johnson 2004	0.21	0.15-0.27
Lepisto 2007	0.24	0.14-0.34
Olsen 2002	0.27*	0.19-0.35

*> 10% impact on point estimate

11.5.1. Sensitivity analysis of the utilization of fertility treatment, stratified by quality of studies



11.5.2. Table of sensitivity analysis of the utilization of fertility treatment, impact of quality of studies

Study	Point estimate	95% CI
All studies included	0.23	0.18-0.29
Low Quality Studies only	0.24	0.13-0.35
Intermediate Quality Studies only	0.24	0.14-0.34
High Quality Studies only	NA	NA

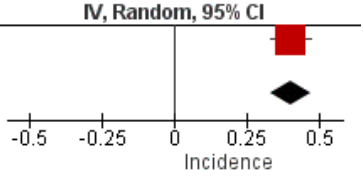
11.6.1. Sensitivity analysis of the utilization of fertility treatment, impact of study design
Not applicable, all studies retrospective

11.7.1. Sensitivity analysis of the utilization of fertility treatment, impact of publication date
Not applicable, all studies published after the year 2000

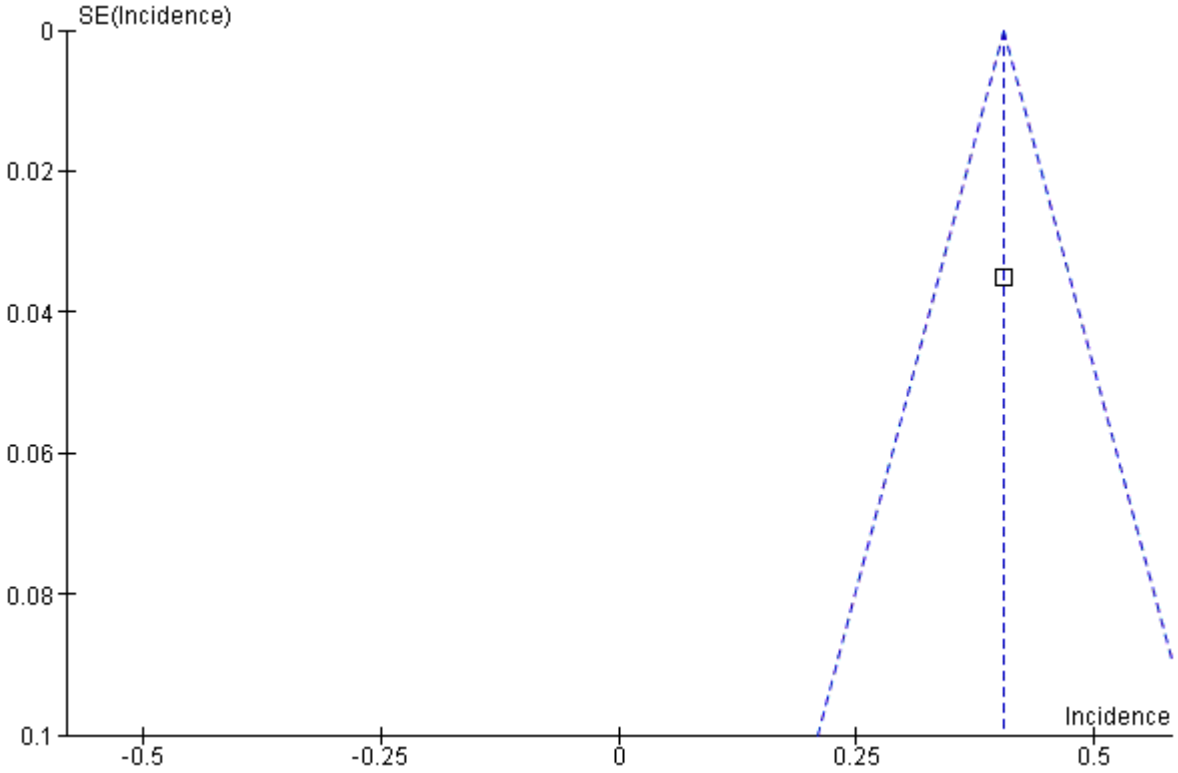
12.1.1. Forest plot of the incidence of chronic postoperative pain, including all studies

Study or Subgroup	Incidence	SE	Postoperative Chronic pain Total	Total	Weight	Incidence IV, Random, 95% CI
Fevang 2004	0.4040404	0.03487291	198	80	100.0%	0.40 [0.34, 0.47]
Total (95% CI)			**198**	**80**	**100.0%**	**0.40 [0.34, 0.47]**

Heterogeneity: Not applicable
Test for overall effect: Z = 11.59 (P < 0.00001)



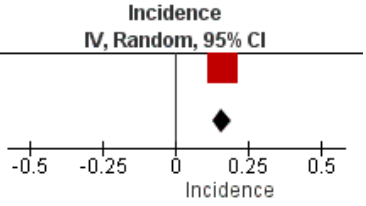
12.1.2. Funnel plot of studies included in analysis of chronic postoperative pain



12.2.1. Forest plot of best case scenario the incidence of chronic postoperative pain

Study or Subgroup	Incidence	SE	Postoperative Chronic pain Total	Total	Weight	Incidence IV, Random, 95% CI
Fevang 2004	0.16	0.01639512	500	80	100.0%	0.16 [0.13, 0.19]
Total (95% CI)			**500**	**80**	**100.0%**	**0.16 [0.13, 0.19]**

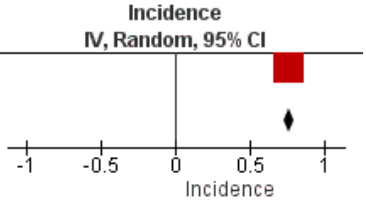
Heterogeneity: Not applicable
Test for overall effect: Z = 9.76 (P < 0.00001)



12.2.2. Forest plot of worst case scenario the incidence of chronic postoperative pain

Study or Subgroup	Incidence	SE	Postoperative Chronic pain Total	Total	Weight	Incidence IV, Random, 95% CI
Fevang 2004	0.764	0.01898968	500	382	100.0%	0.76 [0.73, 0.80]
Total (95% CI)			**500**	**382**	**100.0%**	**0.76 [0.73, 0.80]**

Heterogeneity: Not applicable
Test for overall effect: Z = 40.23 (P < 0.00001)



12.3.1. incidence of chronic postoperative pain, by anatomical location:
Not applicable, all studies lower GI surgery (appendectomy)

12.4.1. incidence of chronic postoperative pain, by surgical technique
Not applicable, surgical technique not specified in 1 study.

12.5.1. Sensitivity analysis of the incidence of chronic postoperative pain, impact of individual studies
Not applicable, only 1 study in analysis

12.6.1. Sensitivity analysis of the incidence of chronic postoperative pain, impact of quality of study
Not applicable, all studies intermediate quality

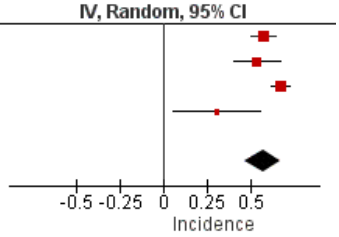
12.7.1. Sensitivity analysis of the incidence of chronic postoperative pain, impact of study design
Not applicable, all studies retrospective

12.8.1. Sensitivity analysis of the incidence of chronic postoperative pain, impact of publication date
Not applicable, all studies published after the year 2000

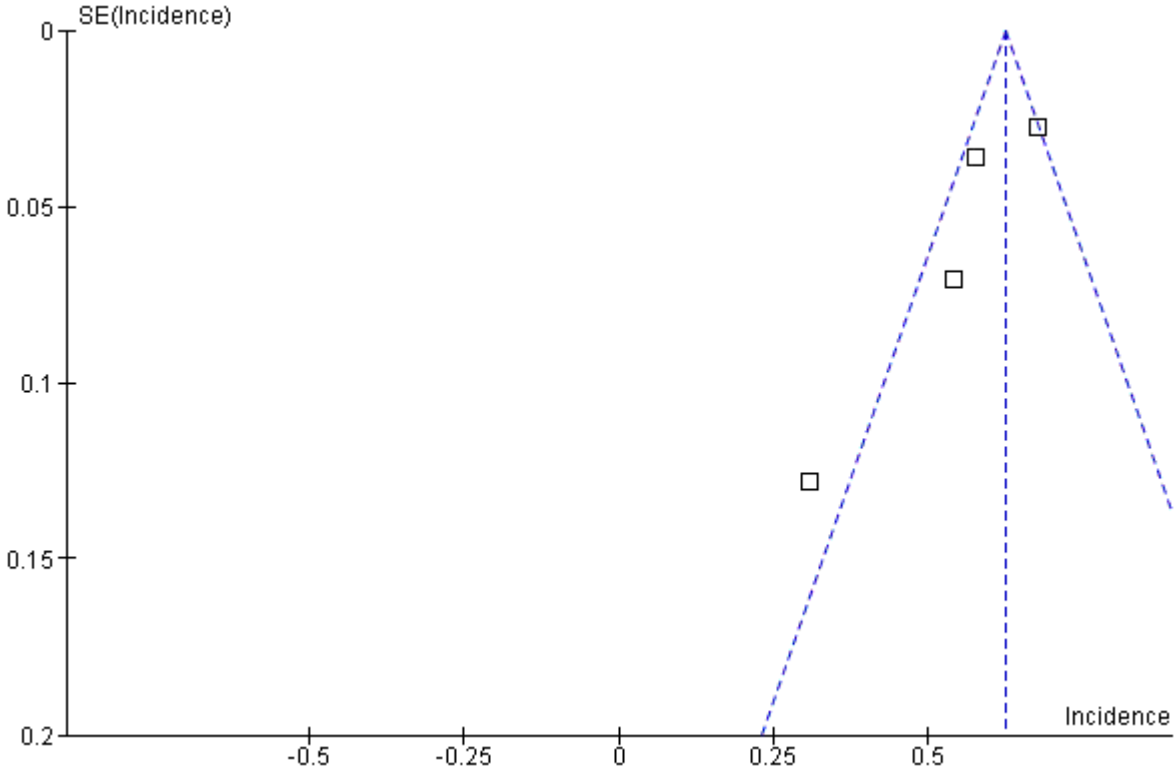
13.1.1. Forest plot of the cross sectional incidence of adhesions in patients with chronic postoperative pain, including all studies

Study or Subgroup	Incidence	SE	Postoperative pain Total	Adhesions Total	Weight	Incidence IV, Random, 95% CI
Bojahr 1995	0.57754011	0.03612127	187	108	31.9%	0.58 [0.51, 0.65]
Howard 2000	0.54	0.07048404	50	27	22.4%	0.54 [0.40, 0.68]
Lehmann-Willenbrock 1990	0.67697595	0.02741306	291	197	34.0%	0.68 [0.62, 0.73]
Pitt 2008	0.30769231	0.12800774	13	4	11.7%	0.31 [0.06, 0.56]
Total (95% CI)			**541**	**336**	**100.0%**	**0.57 [0.47, 0.67]**

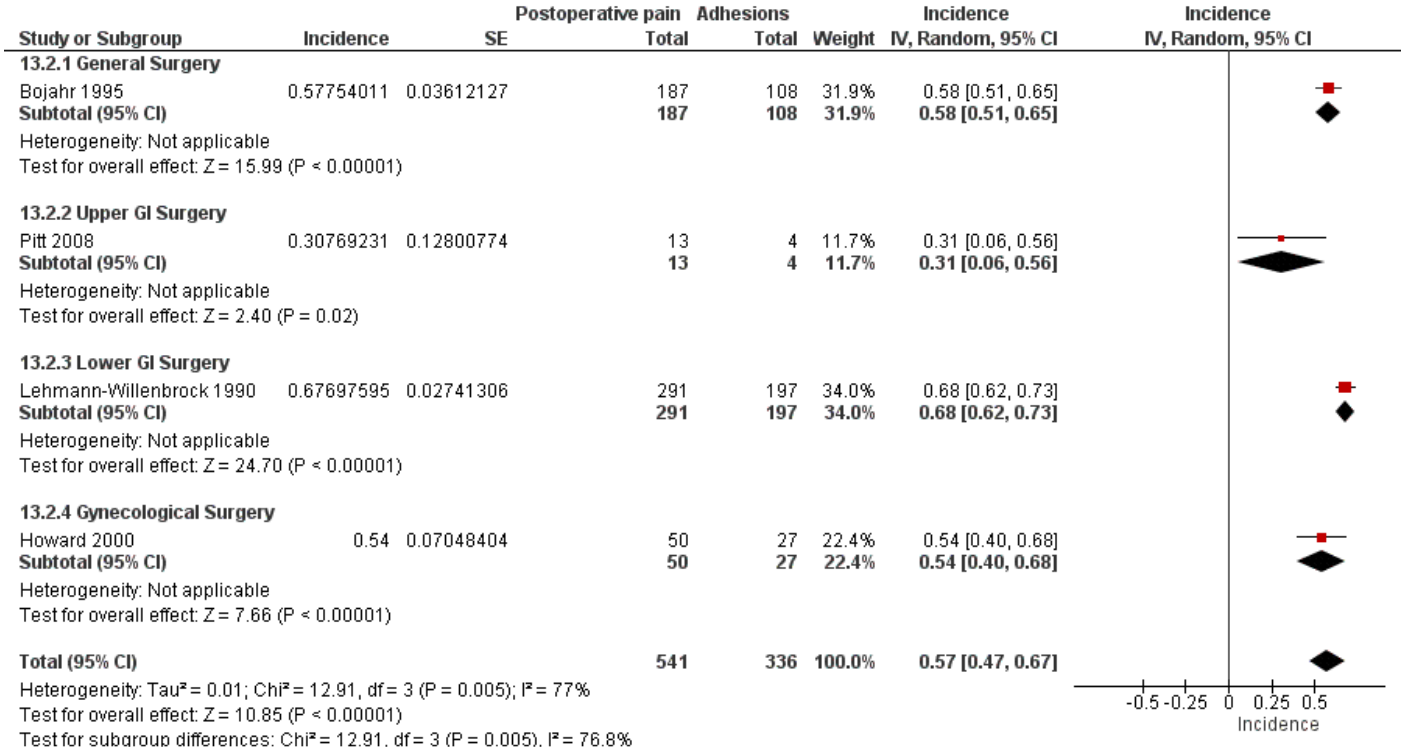
Heterogeneity: Tau² = 0.01; Chi² = 12.91, df = 3 (P = 0.005); I² = 77%
Test for overall effect: Z = 10.85 (P < 0.00001)



13.1.2. Funnel plot of studies included in analysis of incidence of adhesions in patients with chronic postoperative pain



13.2.1. Forest plot of the cross sectional incidence of adhesions in patients with chronic postoperative pain, stratified by anatomical location

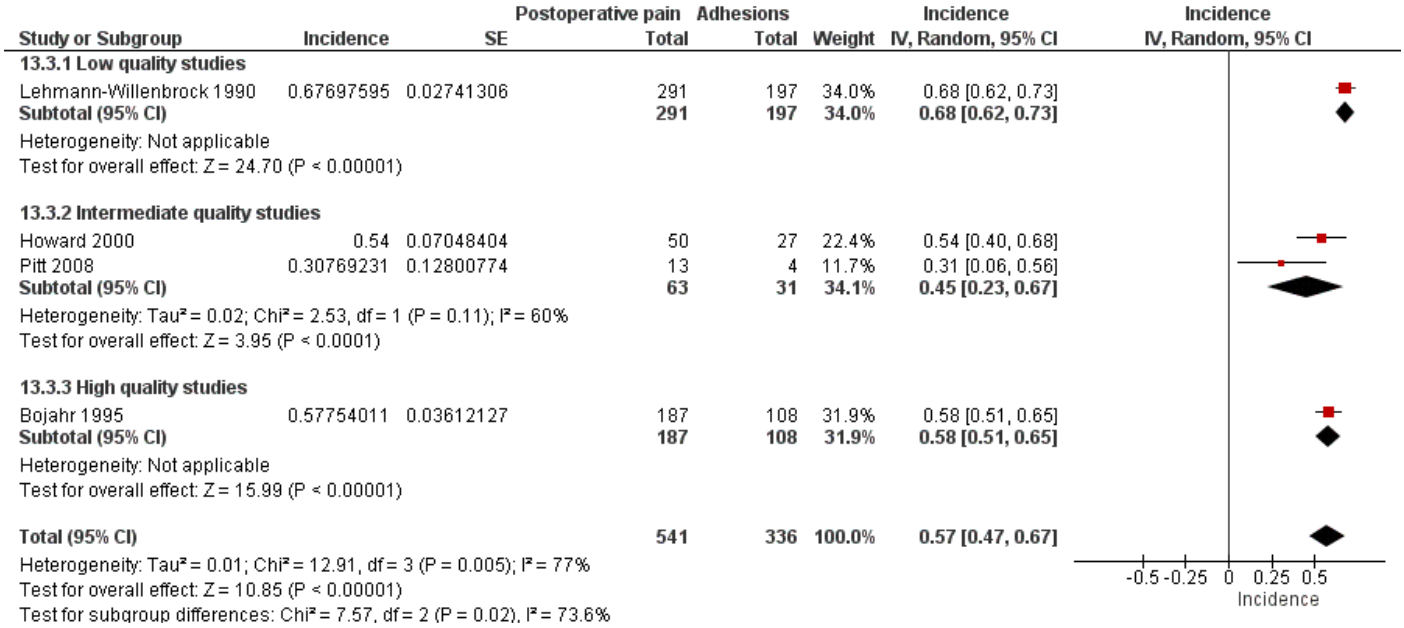


13.3.1. Cross sectional incidence of adhesions in patients with chronic postoperative pain, by surgical technique.
Not applicable.
3 studies excluded. Surgical technique not specified in one. No data per subgroup of surgical technique in 2 studies.
Remaining study (Pitt 2008) is performed in laparoscopy group, point estimate: 0.31 95%CI: 0.06-0.56.

13.4.1. Sensitivity analysis of the cross sectional incidence of adhesions in patients with chronic postoperative pain, impact of individual studies.

Study	Point estimate	95%CI
All studies included	0.57	0.47-0.67
Bojahr 1995	0.54	0.37-0.72
Howard 2000	0.58	0.45-0.70
Lehmann-Willenbrock 1990	0.52	0.41-0.64
Pitt 2008	0.61	0.53-0.70

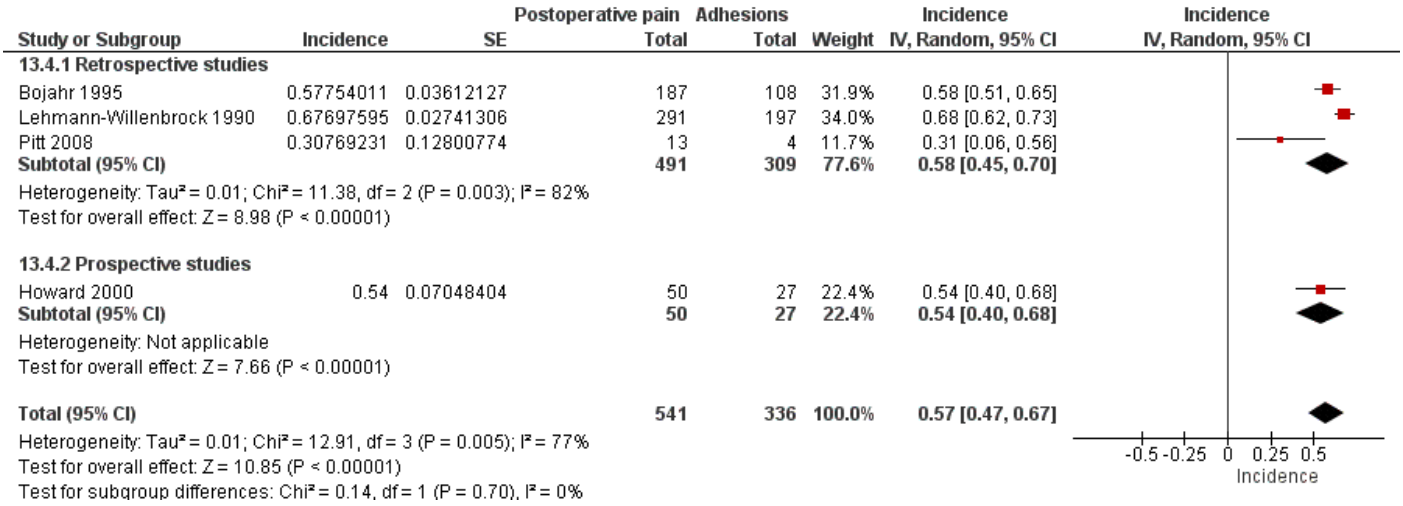
13.5.1. Sensitivity analysis of the cross sectional incidence of adhesions in patients with chronic postoperative pain, stratified by quality of study



13.5.2. Table of sensitivity analysis of the cross sectional incidence of adhesions in patients with chronic postoperative pain, impact of quality of studies

Studies	Point Estimate	95%CI
All studies included	0.57	0.47-0.67
Low quality studies only	0.68	0.62-0.73
Intermediate quality studies only	0.45	0.23-0.67
High quality studies only	0.58	0.51-0.65

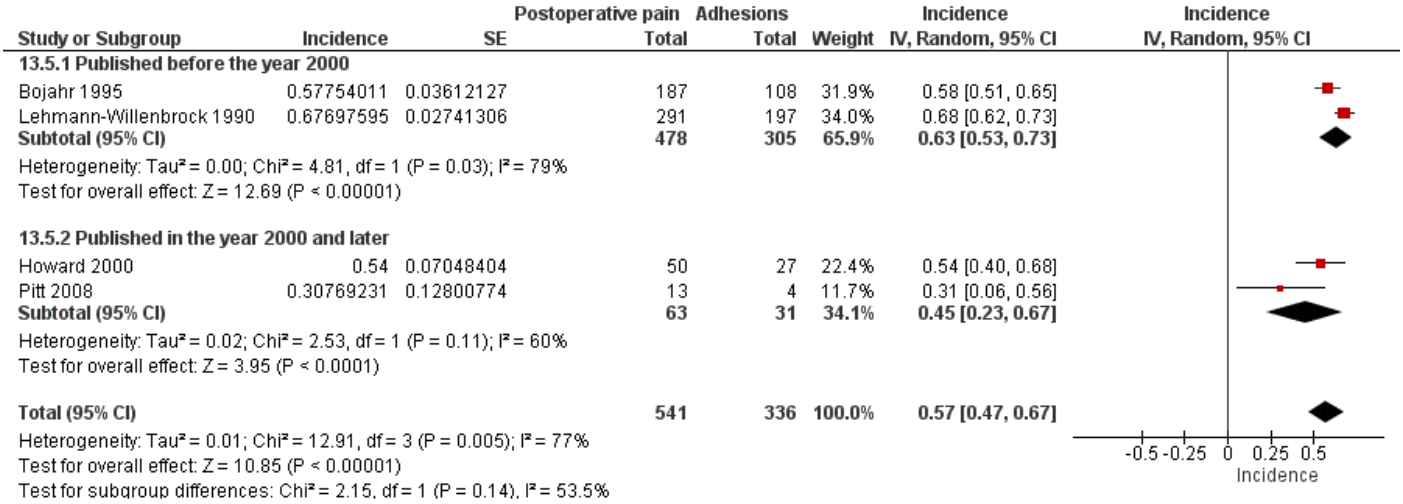
13.6.1. Sensitivity analysis of the cross sectional incidence of adhesions in patients with chronic postoperative pain, stratified by study design



13.6.2. Table of sensitivity analysis of the cross sectional incidence of adhesions in patients with chronic postoperative pain, impact of study design

Studies	Point Estimate	95% CI
All studies included	0.57	0.47-0.67
Retrospective studies only	0.58	0.45-0.70
Prospective studies only	0.54	0.40-0.68

13.7.1. Sensitivity analysis of the cross sectional incidence of adhesions in patients with chronic postoperative pain, stratified by publication date



13.7.2. Table of sensitivity analysis of the cross sectional incidence of adhesions in patients with chronic postoperative pain, impact of publication date

Studies	Point Estimate	95% CI
All studies included	0.57	0.47-0.67
Studies published before the year 2000	0.63	0.53-0.73
Studies published in the year 2000 and later	0.45	0.23-0.67